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INTRODUCTION

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PRACTICE

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MIDWIFERY.

PART THE FIRST.



By THOMAS DENMAN, M. D.

PHYSICIAN-MAN-MIDWIFE TO THE MIDDLESEX HOSPITAL,

AND

TEACHER OF MIDWIFERY IN LONDON.

London:

PRINTED IN THE YEAR M. DCC. LXXXII.

W. C. 1861

TO

Dr. WILLIAM OSBORN.

DEAR SIR,

THESE Papers are printed for the use of the Gentlemen who have done us the honour of attending our Lectures. I request you to accept them as a mark of my affectionate esteem, and I earnestly wish that they may commemorate the friendship, which beginning with our first studies, has continued, undisturbed, to the present time.

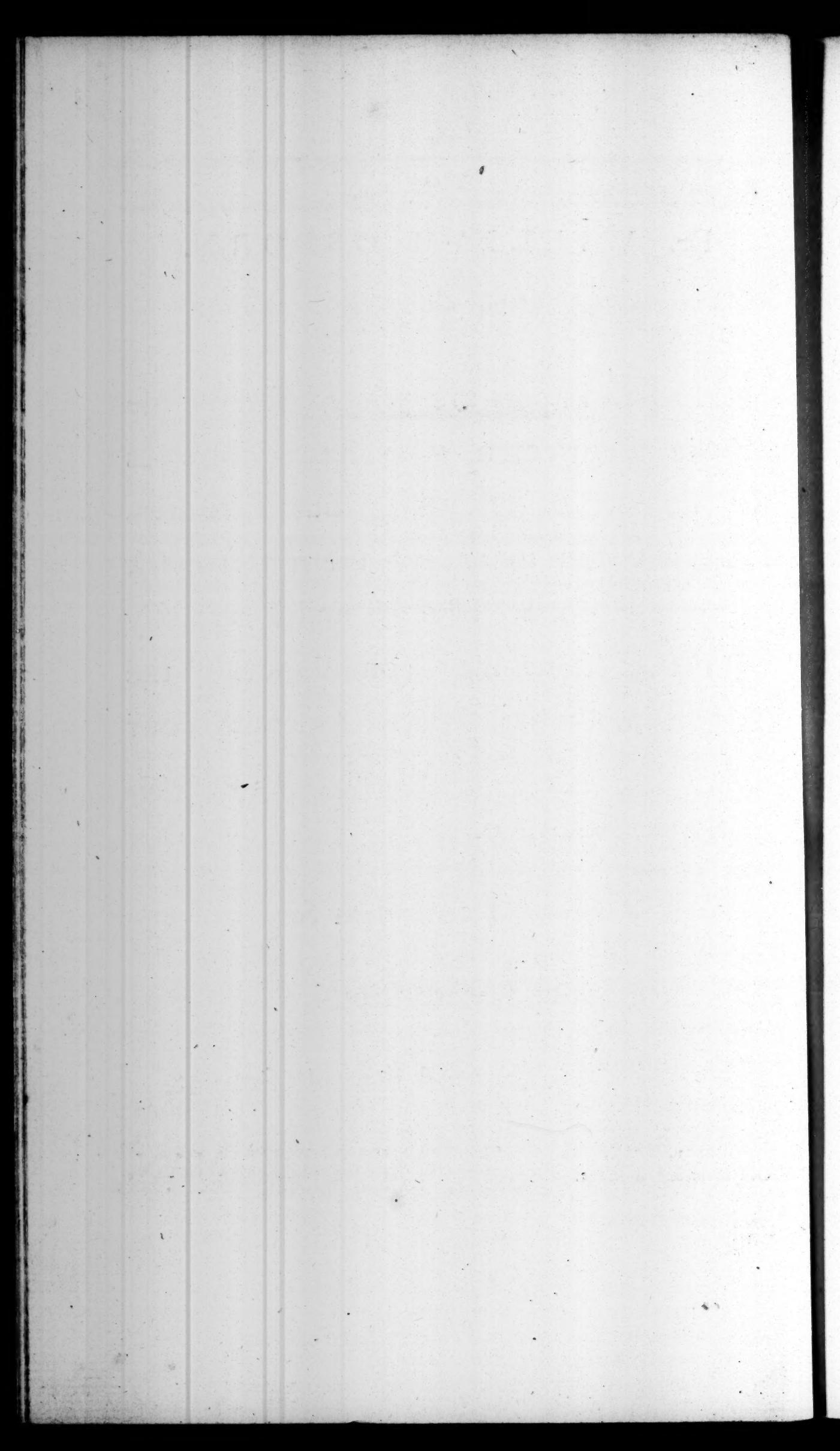
I am, dear Sir,

your sincere friend,

and most humble servant,

Nov. 1, 1782.
Old Burlington-street.

THOMAS DENMAN.



CHAPTER I.

SECTION I.

On the Pelvis.

THE anatomical and physiological knowledge of the whole body, may, on various occasions, be applied with advantage in the practice of midwifery, but that of the parts concerned in parturition is absolutely necessary. In the consideration of every subject there must however be some point of commencement, and as there is a propriety in the method pursued by systematic writers, I shall give a description of the structure, situation, connection, use, and diseases of these parts, beginning with the *pelvis*, which is of great importance, on account of the direct influence which it has upon labours, and because it may be esteemed a foundation on which all the other parts are sustained.

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The term *pelvis* has been indiscriminately given to the inferior part of the cavity of the *abdomen*, and to the bones which form the cavity: but it seems better to confine the term to the bones, and to call the space between them, the cavity of the *pelvis*.

The *pelvis* in the adult state is composed of four bones; the *sacrum*, the *os coccygis*, and the *osseae innominae*.

The *sacrum* is situated at the posterior and inferior part of the trunk of the body, and serves as a basis for the support of the spine, of which it is an imperfect continuation. Its figure is that of an irregular triangle, with the shortest side placed upwards. The anterior surface is smooth and flat, and has a considerable degree of inflection or curvature, called the hollow of the *sacrum*, by which the cavity of the *pelvis* is much enlarged. To the posterior surface, which is convex and uneven, the muscles of the spine and thigh are attached.

In the infantile state, the *sacrum* is composed of five, and in some subjects of six bones, called false *vertebræ*, cemented together by intervening cartilages, which in the adult become bone, leaving little ridges or lines on the anterior surface, indicating the part where they had been separate. These bones diminish in their size as they descend, so that the lowest, which makes the point of the

sacrum, scarcely maintains the character of one of the *vertebræ*.

The articulation of the upper part of the *sacrum* with the last of the lumbar *vertebræ*, is similar to that of the *vertebræ* with each other; but by the manner in which the *sacrum* and *vertebræ* are joined, the latter inclining over the former, an obtuse angle is made, called the great angle of the *sacrum*.

Through the *sacrum* there is a canal for the residence and security of the *medulla spinalis*; but the posterior part of the canal is incomplete below the third bone, a strong ligamentous substance supplying the place of bone. That part of the *medulla*, which is contained in the *sacrum*, is called the *cauda equina*.

On the anterior part of the *sacrum* there are four pair of holes or perforations, or more, according to the number of bones of which the *sacrum* was originally composed, through which pass large nerves for the use of the parts contained in the *pelvis*, and of the inferior extremities. On the posterior part of the *sacrum*, there is an equal number of perforations disposed in the same longitudinal order; but they are less than those on the anterior part, and covered by membranes, which allow small nerves to pass through them.

The *sacrum* is of a very cellular texture, and is said to be lighter than any other human bone of equal magnitude.

The lateral parts of the *sacrum* form a broad unequal surface, by which it is connected with intervening ligamentous cartilages to another uneven surface at the posterior part of the *os sacrum*. The inequalities of these surfaces, receiving and being received by each other, contribute very much to the firmness of the union of these bones. An *anchylosis* is not unfrequently formed between the *sacrum* and *os sacrum*.

To the inferior extremity or point of the *sacrum* is subjoined the *os coccygis*, which has by some writers been considered as a distinct bone, and by others as an appendage to the *sacrum*; and these form by the manner of their union, an obtuse angle, called the little angle of the *sacrum*. In infancy the *os coccygis* is cartilaginous, but in adult age it is composed of three or more, frequently of four bones, connected by intermediate cartilages, the uppermost of which is somewhat broader than the lower part of the *sacrum*. In some subjects these bones coalesce and form a single bone; and in others an *anchylosis* is formed between the *sacrum* and *os coccygis*, in consequence of which the latter is shortened and turned inwards, so as to obstruct the head of the child in its passage through

through the *pelvis*. But the impediment thereby occasioned may be overcome by the force with which the head is propelled, and the *os coccygis* again separated from the *sacrum*, of which I have known more than one instance. In general however, between the bones of which the *os coccygis* is composed, some regressive motion is preserved; and that which is produced between the *sacrum* and *os coccygis*, when the latter is pressed by the head of a child passing through the *pelvis*, occasions a considerable temporary enlargement of the inferior aperture of the *pelvis*. The insertion of the *coccygæi* muscles, of a part of the *levatores ani*, and of portions or slips of the sacrosciatic ligaments into the sides of the *os coccygis*, keep it steady, and prevent any lateral motion.

The *ossa innominata* are the broad, large bones which form the forepart and sides of the *pelvis*, and the lower part of the sides of the *abdomen*. In children each of these bones is composed of three, and though they afterwards become one, the line of original distinction may be observed at the *acetabulum*, or socket which receives the head of the thigh bone. While the bones are distinct they have peculiar names, the *ilium*, the *ischium*, and *pubis*, which it is necessary to retain in the adult state, that we may be able to describe with more accuracy

accuracy each individual bone, or allude to it in the description of the adjoining parts.

The *ilium* is the largest and uppermost of the bones which form the *osса innominata*. It is flat, broad, unequally convex and concave, in some parts round, and in others of an irregular square figure. It is divided by anatomists into the *crista*, *basis*, anterior and posterior edge, and the two sides, external and internal.

The upper part, which has a thick, arched border, is called the *crista*. The anterior and middle part of it is convex outwardly, and the posterior somewhat convex inwardly. The *crista* has originally on its verge an *epiphysis*, of which there are often marks to an advanced age.

The *basis* or inferior part of the *ilium* is thick and narrow. It forms anteriorly a portion of the *acetabulum*, and posteriorly, a large share of the circumference of the ischiatic sinus, which is completed by the *ischium* and sacrosciatic ligaments.

The anterior edge of the *ilium* has two eminences, called spines, distinguished as superior and inferior, between which there is an excavation or notch, and another below the inferior spine.

The posterior edge is shorter and thicker than the anterior, and terminates with two prominences or spines, between which there is also an excavation.

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The external side of the *ilium* is convex on the fore, and concave on the back part. The internal side is irregularly concave; and upon that surface which is connected with the sacrum there are several irregularities. From the upper part of this surface there runs a prominent line, which forms a margin, defining the upper aperture of the *pelvis*.

The *ischium* forms the lowest portion of the *os innominata*. Its parts are described under the names of body, tuberosity, or obtuse process, and *ramus*.

The body of the *ischium* forms the lowest and largest part of the *acetabulum*, and sends out a small *apophysis*, which projects backwards and inwards, and is called the spine or spinous process of the *ischium*.

The tuberosity or obtuse process is very thick and uneven, and is turned downwards. As it is the part on which the body rests when we sit, it hath also been called *os sedentarium*. The convex portion was originally an *epiphysis*, and from the remains of the tendons and ligaments which were affixed to it, has in the fresh subject a cartilaginous appearance.

The *ramus* is a flat thin process or *apophysis*, proceeding from the curvature of the tuberosity, ascending and joining to a similar but shorter process, which springs from the anterior and inferior

part

part of the *osse pubis*. The *ramus* of the *ischium*, aided by this short process, forms a large part of the outline of that opening, called the *foramen magnum ischii*. This opening, in the recent subject, is filled up by a strong ligamentous membrane, which gives rise to the external and internal muscles called *obturatores*.

The *osse pubis* contribute the smallest share towards the formation of the *osse innominata*. Each of them has been described in three parts, the body, the angle, and the *ramus*.

The body is that part which is placed transversely before the anterior part of the *ilium*, to which it is united, forming by this union the oblique eminence, which distinguishes on the inner part of the *pelvis* these two portions of the *osse innominata*. The body of the *pubis* serves also to the formation of the *acetabulum*. The upper edge has on its inner part an oblique ridge, which is called the *crista*, and is continuous with that of the *ilium* beforementioned, as defining the margin of the *pelvis*.

The anterior part of the *pubis* is called the angle, and constitutes that surface which being joined to the opposite bone, forms the *symphysis* of the *osse pubis*. This part of the bone is flat and thin. The *osse pubis* connected together form on the external or inferior side an unequal concavity; but

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on the internal or superior surface, they are pretty equally convex, and both the edges have a small degree of flexure outwards.

The *ramus* is a flat, thin, short *apophysis*, which running obliquely downwards, unites with that of the *ischium*. The two *rami* of the *ischia* and of the *osse pubis* form on the anterior and inferior part of the *pelvis* an arch, which is usually called the arch of the *pubis*. This arch is much larger in women than men; which circumstance is favourable to the emergence of the head of the child at the time of birth, and establishes the most distinguishing mark between the male and female *pelvis*.

S E C T I O N II.

THE advantage to be derived from the knowledge of the bones of the *pelvis*, in a dried or separated state, is not very evident. But we may consider the previous intelligence of this and some other parts of our subject as essentially useful, because it comprehends the rudiments of a more perfect knowledge than can be otherwise acquired: we

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shall therefore proceed to examine the manner in which these bones are connected.

To the two lateral surfaces of the *sacrum* are joined the posterior surfaces of the *osса innominata*, and these are covered with a thin intervening cartilage, or ligamentous cartilage; the inequalities, as was before observed, contributing very much to the firmness of the junction. The *osса innominata* are also joined at the anterior part by a thin cartilage, which covers the scabrous end of each bone, and the space between them is filled up with a ligamentous substance. This connection is called the *symphysis* of the *osса pubis*.

Within the circuit of the *pelvis*, the *periosteum* is thickened at the parts where the *osса innominata* are joined to the *sacrum*, and at the *symphysis* of the *osса pubis*. The *symphysis* has also been described as connected by a thin transverse ligament, or by ligaments which form what may be considered as a capsular ligament, adhering to the part which it enclofeth, and to which it gives the principal strength. Greater stability could not be procured by any internal mode of union, without a diminution of the cavity of the *pelvis*.

But on the external parts of the *pelvis*, where the union of the bones could be more firmly established by a ligament, there is no point where one is omitted; even the tendons of the muscles insert-

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ed into the projecting parts of the bones, though particularly designed for other purposes, eventually contribute to the strength of the *pelvis*.

From the posterior edges of those surfaces of the *os innominata* which are joined to the *sacrum* strong ligaments pass, which bind these bones firmly together; and all that unequal space behind them is filled up with small muscles, or the small parts of large muscles, in such a manner as to give in the fresh subject, when covered by their tendinous expansion, a surface almost smooth.

From the obtuse processes of the *ischia*, strong ligaments arise, which expanding, pass to the posterior edges and *apophyses* of the *sacrum*, detaching in their passage small portions to the *os coccygis*. These ligaments are called the broad or external sacrosciatic. From the spinous processes of the *ischia*, ligaments arise, which crossing and adhering to the ligaments before described, pass to the inferior and inner edge of the *sacrum* and the upper part of the *os coccygis*, sending slips or small portions to the edges of this bone through its extent. These are called the internal sacrosciatic ligaments.

SECTION III.

BY the knowledge of the parts where, and the manner in which the bones of the *pelvis* are connected together, we are enabled to explain many uneasy sensations which women have, and many infirmities to which they are liable at the time of pregnancy and after their delivery.

It was for many centuries a received opinion, that these bones, though joined together in such a manner as scarcely to afford any suspicion of a separation, were always separated at the time of parturition ; or that there was a disposition to separate, and an actual separation, if the necessity of any particular case required that enlargement of the cavity of the pelvis which was consequent to it. The degree of separation was also supposed to be proportionate to such necessity ; and if it did not take place, or not in such a degree as was required, distending instruments were contrived and used to produce or increase it : and upon the same principle the section of the *sympysis* of the *os pubis* hath been lately recommended. This opinion ought probably to be assigned as one reason, for the superficial notice taken by the early writers in midwifery, of those difficulties which are sometimes

found to occur at the time of parturition from the smallness or deformity of the *pelvis*. To this may also be referred much of the popular treatment of women in child-bed, and many popular expressions in use at the present time. But this opinion hath been controverted by many writers, who assert, that there was neither a separation, nor a disposition to separate; but that when either of them did happen, they were not to be esteemed as common effects attendant on the parturient state, but as diseases of the connecting parts. The disputants on each side have appealed to presumptive arguments, and to facts proved by the examination of the bodies of those who have died in child-bed, in justification of their several opinions. But notwithstanding all which has been said upon the subject, I know not that we are authorized by the experience of the present time to say, that a separation, or a disposition to separate, prevail universally at the latter part of pregnancy, or at the time of labour; yet that these effects are often produced may be gathered from the pain and weakness at the parts where the bones of the *pelvis* are joined to each other, before and after delivery. In some cases pregnant women are also sensible of a motion at the junction of the bones, especially at the *sympysis* of the *os pubis*, and the noise which accompanies it may be heard by an attentive bystander.

A strong

A strong presumptive argument in favour of the separation of the bones has been drawn from quadrupedes. In these, the ligaments which pass from the obtuse processes of the *ischia* to the *sacrum*, on which the firmness of the junction of the bones very much depends, and which at all other times resist any impression attempted to be made upon them, are for several days previous to parturition gradually deprived of their strength, and the animal walks in such a manner as would incline us to believe could only be produced by a separation of the bones of the *pelvis*. Now it is not reasonable to conclude, that a circumstance which generally takes place in one class of viviparous animals should never occur in another, especially in a matter in which there is no essential difference.

We may, however, leave the question to be completely settled by future observations. To insist that either of the changes occur in every case, or that they never occur, seems an attempt to support opinions repugnant to daily experience: for no person who has been conversant in the dissection of women who have died in child-bed, can have wanted opportunities of seeing every intermediate state of these parts, from a separation in which the surfaces of the bones were loosened, and at a considerable distance from each other, to that in which there was not the least disposition to separate.

Several

Several cases of the separation of the bones of the *pelvis* having occurred in my own practice, I have been under the necessity of considering it with the most serious attention, and I presume that it may be produced by two causes; first, a spontaneous disposition of the connecting parts; secondly, the violence with which the head of the child may be protruded through the *pelvis*. Of a separation from each of these causes it will not be improper to give an example, to prove the fact, and to shew its consequences.

C A S E I.

A young lady of a healthy constitution and lively disposition, who was married in the twenty-first year of her age, was in the beginning of the year 1774 delivered of her third child, which was unusually large, after a very severe and tedious labour. For several days before her delivery she was rendered unable to walk without assistance, by pain and weakness in her loins. Her recovery was favourable and uninterrupted, except that for several succeeding weeks she was incapable of standing upright or putting one foot before the other; the attempt to do either being attended with pain, and a sense of looseness or jarring both at the parts where the *osса innominata* are joined to the *sacrum*, and at the *symphysis* of the *osса pubis*. By the use of such

such medicines and means as contributed to strengthen her constitution, she was soon able to walk, and in a few months was perfectly well.

Having before seen a case of the same kind, I suspected that these complaints were occasioned by the weakness of the connection of the bones of the *pelvis*, and imputing this weakness to too frequent parturition, she was advised to suckle her child a longer time, and accordingly continued a nurse for fifteen months.

She soon conceived again, and when the time of her confinement drew near, the complaints which she had in her former pregnancy were increased to such a degree, that she could neither walk or stand; and for three weeks there was reason to suspect that the bones of the *pelvis* were separating.

July 7, 1777, she was delivered of her fourth child. At the time of her labour she had frequent faintings, great marks of disturbance and irritability, and was wholly unable to move her inferior extremities.

A few days after her delivery she had a fever, which terminated in an abscess in one of her breasts. By this, which was very painful and distressing, she was confined to her bed for near seven weeks. At the end of nine weeks she could walk with crutches, when she was sent into the country, from which she received much benefit, as she believed she

likewise

likewise did by drinking half a pint of a strong infusion of malt twice daily. In about five months she was able to walk without assistance, though she was sometimes sensible of the motion of the bones, which seem never to have been perfectly united.

About Christmas she was again pregnant, and in July, 1778, being indisposed to move, as she imagined, by the sudden and uncommon heat of the weather, the pain and weakness in her back returned, and she could not walk any more without assistance to the time of her labour, which came on October 11. On the 13th she was delivered of a very fine child. Her labour, which was uncommonly severe and alarming, was made infinitely more fatiguing by her inability to move, all power of supporting herself being lost, and every necessary change of position being made by her assistants.

On the fourth day after her delivery she was seized with a fever which was soon removed, but her situation remained really deplorable. The pain at the junction of the bones continued, she had no command of her inferior extremities, and when she was moved, the pain became excruciating, as if she was tearing asunder. Her stomach was at all times much disturbed: but when she had the pain in an increased degree, a vomiting, or oppressive nausea, or hiccough was brought on. The pain

also produced strange sympathies in various parts, as a very teasing cough, a constant sneezing, a sense of weight in her eyelids, which she could not keep open, though she was not sleepy, noise in the bowels, and many other nervous affections: when, therefore, the pain was violent, she had recourse to opiates, which she took discretionally, and the pain being quieted, the sympathies soon ceased.

At the request of my patient, I explained upon a skeleton the opinion entertained of her complaints; and when I pointed out the manner in which the parts were supposed to be affected, she was fully persuaded of the truth of the opinion.

In this situation she had remained for several months, when it was thought expedient that she should be raised from her bed, and make an effort to stand or walk, least her complaints should be rendered worse by the habit of resting so long in an inactive state. Every position was tried, and every contrivance made, which had a chance of being useful; but the power of supporting herself was totally gone, the motion of the bones was plainly perceived, and the consequences of every trial were so painful and uncomfortable, that it was not judged proper to repeat them, but to wait till by time the connection of the bones was more confirmed.

About six months after her delivery she menstruated, which she has continued to do at irregular

lar periods ; yet, though much benefit was expected from this circumstance, no alteration hath been produced by it with respect to her complaints.

In the year 1779 she was removed upon a couch in a boat to Margate, for the benefit of the air and bathing in the sea, from which she is always sensible of receiving advantage. There she has continued to reside ; and though four years are elapsed since the time of her delivery, she is but just able to walk tolerably with her crutches, though sensible of a gradual amendment.

C A S E II.

Many years ago I attended a young woman of a healthy, but delicate constitution, who was in labour of her first child. The *os uteri* was fully dilated, the membranes broken, and the waters discharged, before I arrived at her house.

She was immediately put to bed, and the pains being very strong, the head of the child was soon pressed upon the *perinæum*, the laceration of which I endeavoured to prevent by supporting it in the usual manner : but the head of the child was forced through the external parts in opposition to the resistance which I was able to make.

At the instant when the head of the child was expelled, I perceived something to jar under my hand, and was even sensible of a noise, which led

me to suspect, that the *perinæum* was lacerated by the sudden expulsion of the head.

After a short time, the *placenta* being separated and protruded into the *vagina*, was extracted without hurry or violence. The uneasiness of which she then complained, being supposed to be what are called afterpains, did not make me solicitous, but a few drops of *tinctura thebaica* were given to appease it.

On the following days she complained of more than usual pain in the lower part of the *abdomen*, which she did not accurately describe; but as there was no symptom of fever, and the milk was duly secreted, no particular enquiry was made, and I presumed that she would soon be well.

On the fourth day after her delivery she was taken out of bed, but could not stand or sit in her chair on account of the pain and weakness in the part of which she complained, and which I found to be immediately upon the *symphysis* of the *os pubis*.

For near three weeks she remained in the same state, perfectly well in her health, and easy in her bed, unless when she attempted to turn on either side: but when she was removed from her bed, she could neither stand or make any effort to walk without assistance, but she could sit for a few minutes,

nutes, resting her elbows upon the arms of the chair.

The continuance of a complaint so very uncommon, rendered it necessary to have a consultation, and a gentleman of great experience and ability was called in. After a very careful examination, we found the internal parts in the natural situation and free from disease; the *perinæum* was not lacerated, nor was there the least appearance of injury about the external parts: but it was judged by the seat of the pain, by her inability to stand or walk, except in particular attitudes and positions, that the *sympysis* of the *os pubis* had given way, and was wholly separated. And there was scarce a doubt but that the separation had taken place when the bulk of the head of the child was passing between the spinous processes of the *ischia*, when I was sensible of the jarring and noise.

As the opinion of the separation was chiefly founded on the particular attitudes and positions in which the patient sought relief, it seems necessary to describe them more fully, and they were very remarkable.

When she endeavoured to stand upright, which she could do better on one foot than both, and better with her feet close than at a distance, together with the pain at the *sympysis*, she had a sense of extreme weakness accompanied with faintness.

When

When she first sat down in her chair, resting her elbows upon the arms of the chair, the complaints became tolerable. When she had remained a little time in this position, they were again importunate, and she supported herself with her hands upon her knees, and presently bent forwards so as to lean her elbows upon her knees ; this position becoming irksome, she was obliged to return to her bed, where she was immediately easy. When she first attempted to walk, she was compelled to bend forwards in such a manner as to rest her hands upon her knees, making a straight line from her shoulder to her feet.

The explanation of her case, and the comfort she received from the assurance that was given of her recovery, encouraged her to bear her confinement and the present inconveniences she suffered with composure ; yet the knowledge we had acquired, presuming our opinion to be true, was useful rather by teaching us how to avoid mischief, than by enabling us to render any actual service.

At the end of fourteen weeks, whilst she was in a coach, into which she had often been lifted for the benefit of air and exercise, she had a discharge which she supposed to be menstrual, and though it had ceased before her return, she was sensible of immediate relief. From that time she mended

daily, and in six weeks was able to walk, her complaints having gradually left her.

She had afterwards three children, with all which I attended her. Her labours were easy, and neither before nor after her delivery had she any tendency to the complaints I have been describing.

The discharge which preceded her recovery was thought to be menstrual: but as it had ceased before her return, and gave relief to a part not directly affected by menstruation, it is more reasonable to conclude that it was from the *symphysis*, and of whatever kind it was, that it had acted as an extraneous body, preventing the re-union of the bones.

Instances have occurred, though they are rare, of women, who after labours have lost all power of moving their inferior extremities, and the inability has been imputed to some paralytic affection; they are said to be bedridden, which describes the effect, though it does not explain the cause of their disease. As these patients have, after a confinement of several years, been generally restored to the use of their limbs, it is not unreasonable to think that their infirmity was occasioned by a separation of the bones, which at different periods after the accident, had recovered their former connection and strength.

SECTION IV.

AN enquiry into the manner in which the bones of the *pelvis* may re-unite when they have been separated seems necessary, as the treatment to be enjoined, and the prospect of success, will be regulated by the idea we entertain of the state of the parts when separated.

When the connection of the bones of the *pelvis* has either been impaired or destroyed, it is probable that a confirmation or re-union takes place by a restoration of the original mode, by a *callus*, as in the case of a fractured bone, or by *ankylosis*.

It is also possible for them to remain in a separated state, and that an articulation should be formed by the ends of each bone, of which I have seen an example in a dead body, at the *symphysis* of the *osse pubis*, and at the junction of the *osse innominata* with the *sacrum*, and have had reason to suspect the same accident in the living.

In all the lower degrees of imperfection in the union of these parts, it is reasonable to conclude, that the former mode is restored soon after delivery ; for the complaints which women make of pain and weakness in these parts are almost always relieved before the end of their month of confinement : but should they

they continue a longer time, it appears that the greatest benefit will be derived from rest and an horizontal position, which will lessen the present inconveniences, and favour that action of the parts by which their infirmity must be repaired.

But if the complaint is in an increased degree, and the health of the patient likewise affected, a longer time will be required for the recovery of the part, which may be forwarded by such means as invigorate the constitution, or such applications as quicken the action of the parts.

Should the injury be too great to allow of the restoration of the original mode of union, of which we are to judge by the consequent impotence to move, a much longer time will be required for the formation of a callus, if that is ever done, but as a previous step to an *ankylosis*, which has been observed by anatomists to take place at the junction of the *ossa innominata* with the *sacrum*, not unfrequently, but never or very seldom at the *sympyysis* of the *ossa pubis*. Under such circumstances, unless by an amendment of the general health, little good is to be expected from medicine, the process which the parts must undergo being an operation of the constitution which it will not be in our power to control. In the first case related, a variety of applications were tried, as blisters and stimulating ones of every kind, to the most emollient, but from

cold bathing only did she receive any advantage. The patient was also assisted by the use of a swath, or broad belt, made of soft leather, quilted, and buckled with such firmness over the lower part of the body, as to lessen, if not prevent the motion of the bones ; and this was restrained in its situation by a bandage passed between the legs, from the hind to the fore part of the belt.

In that unfortunate situation, in which a joint is formed between the separated surfaces of the bones, all hopes of the recovery of the patient to her former abilities may be given up ; and what remains to be done for her relief, will be by the use of a belt, or a similar contrivance, to substitute as much artificial firmness as we can for the natural which is lost. In the case in which I suspected this event to have happened, the life of the patient was truly miserable : but I presume that such very rarely occur, having been lately informed of a person, who after a confinement of eight years to her bed, in consequence of the separation of the bones at the time of labour, was restored to the full and perfect use of her inferior extremities.

SECTION V.

THERE is a wonderful variety in the position of the *pelvis* in the different classes of animals, as it relates to that of the body in general, and their powers and properties very much depend upon this circumstance. But with a view to this subject, they may be divided into three kinds, the strong, the swift, and the mixed.

In those animals which possess the greatest share of strength, the position of the *pelvis* is nearly perpendicular, and the two apertures of the cavity horizontal.

In those which are distinguished by their speed or agility, the position of the *pelvis* is horizontal, and the two apertures nearly perpendicular.

In mixed animals, or those in which strength and speed are united, the position of the *pelvis* is neither horizontal or perpendicular, but inclined, so as to partake, by different degrees of inclination, of the advantages of either position.

In the human species, when the position of the body is erect, the *pelvis*, which is stronger in proportion to their size than in any quadruped, is so placed, that a line passing from the third of the lumbar *vertebræ* will fall nearly upon the superior edge of

the *symphysis* of the *osse pubis*; the cavity of the *pelvis* being projected so far backwards, that the *osse pubis* become the part on which the enlarged *uterus* chiefly rests in the advanced state of pregnancy. If then we recollect the smallness of the *osse pubis*, the manner in which they are connected, and advert at the same time to the increasing effect, which may be produced by the internal pressure of the weight supported by them, we shall not be surprized at the frequency of the complaints of pain and weakness at the *symphysis*, especially when the child is large, or the patient under the necessity of standing for a long time. And should there be any degree of weakness, relaxation, or disunion, at the parts where the *osse innominata* are joined to the *sacrum*, similar effects will be produced; and one of these parts can scarcely be affected without an equivalent alteration in the other.

The consequences of the separation of the bones of the *pelvis*, or of their disposition to separate, will be more clearly comprehended, if we consider the *pelvis* as an arch supporting the weight of the superincumbent body. In this view, the *sacrum* may be called the key-stone, the *osse innominata*, as far as the *acetabula*, the pendentives, and the inferior extremities, the piers of the arch.

If a greater weight be laid upon an arch than it is able to sustain, one of these consequences will follow;

follow ; the key-stone will fly, the pendentives will give way, or the piers will yield to the pressure.

To prevent the two first accidents, it is usual to lay heavy bodies upon the different parts of the arch, the weight of which must bear a relative proportion to each other, or the contrary effect will be produced ; for if too great weight be laid upon the key-stone, the pendentives will fail ; and if there be too much pressure upon the sides, the key-stone will be forced.

When the greatest possible strength is required in an arch, it is usual to make what is called a counter-arch, which is a continuation of the arch till it becomes circular, or of any intended form. This contrivance changes the direction of the weight, before supported at the chord, and part of it will be conducted to the centre of the counter-arch, and borne in what is called the fine of the arch.

If the resemblance of the *pelvis* to an arch can be allowed, we may consider all the fore or lower part of it, between the *acetabula*, as a counter-arch, which will explain to us the reason of so much stress being made upon the *symphysis* of the *os pubis*, when there is any increase of the super-
incumbent weight, or when that part is in a weak-
ened

ened or separated state, as in the second case before described.

When that patient lay in an horizontal position she was perfectly easy, there being then no weight upon the *pelvis*.

When she was erect, the weight borne by the *symphysis*, being greater than it could support, she could walk before she could stand; or if she stood, she was obliged to move her feet alternately, as if she was walking; or she could stand upon one leg better than upon both. By these various movements she took the superincumbent weight from the weakened *symphysis*, and conducted it by one leg in a straight line to the ground.

The fatigue of walking, or of the alternate motion of the feet, being more than she was able to bear, she was obliged to sit. When she first sat in her chair, she was upright, resting her elbows upon the arms of the chair, by which means part of her weight was conducted to the chair, not descending to the *pelvis*. But there being then more weight upon the *symphysis* than it was able to bear for any long time, and her arms being weary, by putting her hands upon her knees, she took off more of the superincumbent weight, conducting it by her arms immediately to her knees. When she rested her elbows upon her knees, the same effect was produced in an increased degree; but this position becoming

coming painful and tiresom, she had no other resource, but was obliged to return to her bed.

It cannot escape observation, that this patient instinctively discovered the advantages of the particular attitudes into which she put herself, and by which she obtained ease, as exactly as if she had understood her complaint, and the manner in which I have endeavoured to explain it.

In the weariness which follows common exercise, when we often change our position, apparently without design, the manner in which ease is procured to any particular part, may be understood by a more extensive application of the same kind of reasoning.

S E C T I O N VI.

THE violence which the connecting parts of the bones undergo, when the head of the child is protruded through the *pelvis* with extreme difficulty, sometimes occasions an affection of that part of more importance than a separation; because, together with the inconveniencies arising from the separation, the life of the patient is endangered by it.

it. This is the formation of matter, preceded by great pain, and other symptoms of inflammation, though in the beginning of the complaint it is difficult to ascertain whether the connecting parts of the bones, or some contiguous part, be the seat of the disease.

In some of these cases, when matter has been formed and confined at the *sympysis* of the *os pubis*, the symptoms of a hectic fever have been produced, and the cause has been discovered after the death of the patient. In others, the matter has burst through the capsular ligament of the *sympysis* at the inferior edge, or perhaps made its way into the bladder; and in others, it has insinuated under the *periosteum*, continuing its course along the *pubis* till it arrived at the *acetabulum*. The mischief being thus extended, all the symptoms were aggravated, and the matter making its way towards the surface, a large abscess has been formed on the inner, or fore part of the thigh, or near the hip, and the patients being exhausted by the fever and profuse discharge, have at length yielded to their fate. On the examination of the bodies after death, the track of the matter has been followed from the aperture of the abscess to the *sympysis*, the cartilages of which were found to be eroded, the bones carious, and the adjacent parts very much injured or destroyed.

It

It may perhaps, be possible to discover by some particular symptom, when there is in this part a disposition to suppurate ; or it may be discovered when suppuration has taken place ; and in all cases of unusual pain, attended with equivocal symptoms, it would be proper to examine these parts with great care and attention. For when there is a disposition to suppurate, by proper means it might be removed ; and when matter is formed, if there be a tumefaction at the *symphysis*, more especially if a fluctuation could be perceived, we might deliberate upon the propriety of making an incision to evacuate the matter, and by such proceeding further bad consequences might be prevented.

S E C T I O N VII.

THE form of the superior aperture of the *pelvis* has been described by some as triangular, and by others as oval, with the widest part from one side to the other. But the inferior aperture, independent of the ligaments and soft parts, cannot be said to resemble any known or general form, on account of its irregularity, though the widest part is

from the inferior edge of the *symphysis* to the point of the *os coccygis*, allowing for the regressive motion of that bone.

The dimensions of the superior aperture of the *pelvis*, from the upper part of the *sacrum* to the upper edge of the *symphysis*, are generally stated to be rather more than four inches, and between the two sides they somewhat exceed five.

Of the dimensions of the inferior aperture it is difficult to form a judgment; but if the ligaments are preserved, it may be said that the proportions are reversed, the narrowest part being on each side. But in the form and dimensions of the *pelvis* in different women, there is an endless variety, not depending upon any alteration which may be produced by disease.

The depth of the *pelvis*, from the upper part of the *sacrum* to the point of the *os coccygis*, is about five inches; but this will be increased when the bone is pressed backwards. From the margin of the *pelvis* to the inferior part of the obtuse processes of the *ischia*, the depth is about three inches, and at the *symphysis*, about one and a half. It appears that the depth of the *pelvis*, at the posterior part, is rather more than three times the depth of the anterior, and that there is a gradual change between the two extremes, if we admit the ligaments to make a part of the outline of the infe-

rior aperture. The knowledge of these circumstances will enable us to judge, in the living subject, how far the head of the child has proceeded through the *pelvis*, and prevent any deception to which we might be liable, if we were to form our opinion by the readiness with which we can feel the head at the anterior part.

The cavity of the *pelvis* is of an irregular, cylindrical form, but towards the inferior aperture there is some degree of convergence, made by the points of the spinous processes of the *ischia* and the termination of the *os coccygis*. This convergence is of great importance in regulating the passage of the head of the child, as it descends towards the inferior aperture; and being perfected, by the soft parts, it gives to the *vertex*, or presenting part of the head, the disposition to emerge under the arch of the *pubis*.

On the concavity or hollow of the *sacrum*, the ease or difficulty with which the head of the child passeth through the *pelvis* will very much depend; and a similar curvature is continued by means of the *ischiatric sinus*, and by the disposition of the *sacrosciatic ligaments* to the obtuse processes of the *ischia*, where the sides of the *pelvis* are perpendicular. The upper edge of the *os pubis* has a slight reflection outwards, which prevents any obstruction to the entrance of the head of the child into

the *pelvis*; and at the lower edge there is some degree of divergence, by which the departure of the head out of the *pelvis* is very much facilitated.

S E C T I O N VIII.

BEFORE we proceed to the examination of the manner in which the head of the child passeth through the *pelvis* at the time of birth, it is necessary to examine its dimensions and structure.

The largest part of the head of a child, not altered by compression, is from the hind to the forehead. The diameter from one ear to another is less by nearly the same proportion, as the space between the *sacrum* is less than that between the sides of the *pelvis*, at the superior aperture.

The head of a child, which appears to be larger according to the size of the body than that of other animals, is at the time of birth incompletely ossified, at every part where the bones of which the *cranium* is composed afterwards unite; but chiefly at the greater fontanelle, or that part where the parietal and frontal bones meet in the adult. By this incomplete ossification, and by the pressure to which

which the head of the child is sometimes subject in its passage through the *pelvis*, the form of the head may be very much altered, and the dimensions lessened; for the edges of the bones will not only accede to each other, but will lap over in a very extraordinary manner, without any detriment to the child. The degree of ossification varies in different subjects; but the head of a newborn infant is universally found to be incompletely ossified, and the advantage resulting from it, is not only perceived in those difficulties which may be occasioned by the natural large size of the head of the child, but in those also which are produced by all the lower degrees of deformity of the *pelvis*. And it is evident beyond all doubt, if this provision had not been made, that many children must have been destroyed at the time of birth, or their parents must have died undelivered.

Daily experience sufficiently proves, that there is a relative proportion between the head of the child and the *pelvis* of the mother; and from the excellent order observed in all the operations of nature, it is reasonable to conclude, that the largest part of the head is conformable to the widest part of the *pelvis*. By the examination of a great number of women who have died in various stages of the act of parturition, it has appeared, contrary to the general doctrine of the ancient and of some

modern

modern writers, when the position of the head was perfectly natural, that the ears were placed towards the *sacrum* and *pubes*, or a little obliquely, and that the *vertex*, or that part where the hair diverges, is exactly or nearly opposed to the center of the superior aperture of the *pelvis*. In the course of the descent of the head, there being some difference in the form of the *pelvis* at each particular part of the cavity, the position of the head is accommodated to each part, not by accident but compulsion, in consequence of that convergence at the lower part of the *pelvis* beforementioned. And with respect to the *pelvis*, the lower the head of the child has descended, the more diagonal is the position of the ears; but they are not placed exactly towards the sides of the *pelvis*, even when a portion of the head has emerged under the arch of the *pubis*. But this description of the changing position of the head of the child in its passage through the *pelvis*, is founded on the presumption that it presents naturally, and is guided by the form of the internal surface. If the head should present differently, there will be corresponding, but not the same changes; or if it should be very small, it will not be influenced by the *pelvis*, but may pass in any direction.

It does not appear that any ill consequences would follow an erroneous opinion of the manner

in which the head of the child is protruded through the cavity of the *pelvis* in a natural labour; for no assistance being wanted, no principle was required for the regulation of our conduct. But in all cases, in which there was a necessity of giving assistance, and where a change of what was deemed the wrong position of the head was comprised, as a very material part of that assistance, as in the use of the forceps, great mischief must often have been unavoidably done both to the parent and child.

S E C T I O N IX.

FROM the examination of the form and dimensions of the cavity of the *pelvis*, and of the head of a child, attempts have been made to explain all the circumstances of a labour upon mechanical principles, and to establish the practice of midwifery upon the foundation of those principles.

It may be supposed for a moment that the passage of the head of a child, through the cavity of the *pelvis*, should be considered simply as a body

passing

passing through a space, and we may try whether it is possible to apply mechanical principles with advantage for the explanation.

The first circumstance to be considered in the attempt is, to ascertain with precision the capacity of the space. It is true, that we have had many mensurations of the *pelvis* in all its parts, and that we have acquired a competent knowledge of the general dimensions, but we know at the same time, that there is in the *pelvis* of every individual woman some variety, and that the exact knowledge of these varieties cannot be gained in the living subject.

It is equally necessary that we should have an accurate knowledge of the size of the body intended to be passed through this space. But though we have a good general idea of the figure and bulk of the heads of children at the time of birth, we are not ignorant that those of no two children are exactly alike, and that the peculiar difference cannot be discovered before a child is born.

The head of a child is of a limited size before it enters the cavity of the *pelvis*, but by compression in its passage, this is altered in a manner and to a degree of which it is impossible to form any previous judgment.

In the consideration of a body passing through a space, there is a necessity of knowing whether it
be

be to pass by its own gravity or force, or is to be propelled by any adventitious power. If by the latter, as is the case of a child at the time of birth, the knowledge of the degree of that power is necessary, to enable us to form an estimate of the possibility or likelihood of its success; but of the degree of this power we can form a very uncertain conjecture in any particular case.

If then we have no precise ideas of the dimensions of the space, nor of the magnitude of the body, nor of the alterations in size or form which the body may undergo, nor of the power excited to propel the body, it does not appear possible to explain upon mechanical principles the progress of a labour.

So much is however to be granted to the introduction of mechanical principles into the practice of midwifery, that they afford the greatest advantage in all those cases of extreme difficulty in which the assistance of art is required, because such assistance must be given upon those principles. And though they will not explain, they will illustrate the operations of the animal body, and when applicable, are the surest guides of human actions. But on the whole, a fondness for, and some affectionation of mechanical principles, seems to have been very detrimental, as to them the frequent and

unnecessary use of instruments, in the practice of midwifery, may in a great measure be attributed.

S E C T I O N X.

THE observations which were made on the form and dimensions of the cavity of the *pelvis* relate to its natural state, but they are also to be considered when the *pelvis* is distorted.

Of the distortion of the *pelvis* there are two general causes. The first is that disease incident to children in the very early part of their lives, known by the term *rachitis*, which preventing the bones from acquiring their due strength or sufficient firmness to support the weight of the superincumbent body, they bend in different directions and degrees, according to the weight imposed upon them. The second is a disease which may occur at any period of life, and from its effect is called *mollities ossium*. It is far less frequent than the *rachitis*, but more dreadful in its consequences, which no medicine hitherto tried has had sufficient efficacy to prevent. In this disease the ossific matter is not thought to be

be dissolved or altered, but to be re-absorbed from the bones into the constitution, and carried out of the body by the common emunctories, or deposited upon some other part where it is useless or prejudicial. The bones thus losing the principle of their stability, become soft according to the degree and continuance of the disease, are unable to sustain the weight of the body, change their natural forms, and in some instances, the most distorted and frightful appearance of the whole body hath been exhibited.

The effect of either of these diseases is not confined to the *pelvis*, yet it is scarcely possible that either of them should exist for any length of time without producing their influence upon it.

The *pelvis* is more commonly distorted at the superior aperture than at any other part. This is particularly occasioned by the projection of the upper part of the *sacrum*, and the lowest of the lumbar *vertebræ*; though in very bad cases a considerable deviation from their natural position is given to several of the *vertebræ*. Should a disease exist in the constitution, which is capable of weakening the bones, it will not appear extraordinary that the *sacrum* should be distorted, if we recollect that its texture is originally spongy, that it supports, both in the erect and sedentary position, a great part of the weight of the body, and that by

the manner of its junction with the last of the *vertebræ*, a considerable angle is made, which if but little increased, will cause a very important change in the form and dimensions of the superior aperture of the *pelvis*. In some cases an irregular convexity, and in others a concavity, are produced by the bending of the *os pubis* in different ways and degrees, by which, together with the projection of the *sacrum* and lumbar *vertebræ*, the dimensions of the superior aperture of the *pelvis*, which in the narrowest part should exceed four inches, are reduced to less than one, and altered in every possible direction.

The form and dimensions of the cavity of the *pelvis* may be changed in any part of its space; but the most frequent alterations proceed from the *sacrum*, which besides the projection before-mentioned, may become too straight, when the advantages which should be derived from its concavity will be lost. Or it may have too much curvature, by which the concavity will be rendered so small as not to admit the head of the child; or an *exostosis* may be formed on its internal surface, which will be the cause of inconveniences equivalent to those occasioned by the want of a proper degree of curvature.

The *os coccygis* may be pressed inwards in such a manner that the point of it may approach the center

center of the cavity ; or the motions between the different portions of the bone may be lost ; or an *ankylosis* may be formed between that bone and the *sacrum* : by all which changes, according to their degree, the head of the child may be impeded in its passage through the *pelvis*.

The *ischia* may be distorted by the unnatural bent of the spinous processes, and the effect of their pressure may be observed on the temporal or parietal bones of the head of a child propelled between them with much difficulty. The dimensions of the inferior aperture may also be lessened by the tuberosities of the *ischia* turning inwards or forwards, by which the arch of the *pubes* will be lessened, and rendered unfit to allow of the emergence of the head of the child, under the *symphysis* of the *os pubis*.

When the stability of the bones of the *pelvis* is impaired, it is not possible to enumerate every kind of distortion which they may suffer, but it is principally in the degree that we are to seek for those great and sometimes insurmountable difficulties which occur in the practice of midwifery, and prove dangerous both to the parent and child.

In some cases, the distortion of one part of the *pelvis* produces an enlargement of the rest. Thus when the superior aperture is contracted, the inferior is expanded ; and hence it is often observed in practice,

practice, when the head of the child hath passed the point of obstruction with the most tedious difficulty, that a labour will be unexpectedly and speedily completed.

When women have the appearance of being much deformed, it is reasonable to think that the *pelvis* must be affected. But there have been many instances of extreme distortion of the spine, yet the *pelvis* has preserved its proper form and dimensions; and some women who were in other respects straight and well proportioned have had a distorted *pelvis*.

If the inferior extremities are bent, or if any part of the body was distorted at a very early period of life, it is said that we may be assured the *pelvis* partakes of the disease, and is involved in its consequences. But when the spine becomes distorted at a more advanced period, it is not to be esteemed a presumptive sign of a distortion of the *pelvis*, being generally occasioned by a local disease of the spine. These observations are, I believe, commonly well founded; but as there are many exceptions, we should not be justified in giving an opinion of a case of this kind, unless we were permitted to make an examination *per vaginam*. Nor should we be able by this examination to determine with precision the existence of distortion, but the degree. If we should not be able to feel any projection of the

the *sacrum* or *vertebræ*, we should have a right to conclude that there is no considerable deformity of the *pelvis*; but if we could feel the *sacrum* or *vertebræ*, we must judge by the readiness with which they can be felt, of the degree of distortion, and of the impediments which may be thereby occasioned. But in a matter of so much concern it behoveth us to be extremely circumspect before we give an opinion, least by our error the peace of families and the comfort of individuals should be destroyed.

C H A P T E R II.

S E C T I O N I.

On the external Parts of Generation.

THE preceding account of the *pelvis* appearing sufficient to serve all the useful purposes of the practice of midwifery, we shall in the next place consider the parts of generation, which have been properly divided into external and internal.

The external parts are the *mons veneris*, the *labia*, the *perinæum*, the *clitoris*, and the *nymphæ*. To these may be added, the *meatus urinarius*, or orifice of the *urethra*. The *hymen* may be esteemed the barrier between the external and internal parts.

That soft fatty prominence which is situated upon the *ossa pubis*, extending towards the groins

and *abdomen*, is called *mons veneris*. Its use seems to be merely that of preventing inconvenience or injury in the act of coition. If a line be drawn across the anterior angle of the *pudendum*, all that part above it, which is covered with hair, may be called *mons veneris*; below it the *labia* commence, which being of a similar, though looser texture, appear like continuations of the *mons veneris*, passing on each side of the *pudendum*, which they chiefly compose. Proceeding downwards and backwards, the *labia* again unite, and the *perinæum* is formed.

All that space between the posterior angle of the *pudendum* and the *anus* is called the *perinæum*, the external covering of which is the skin, as the *vagina* is the internal, including between them cellular and adipose membrane, and the lower part of the *sphincter ani*. The extent of the *perinæum* is generally about one inch and a half, though in some subjects it is not more than one, and in others exceeds two inches. The thin anterior edge is called the *frænum labiorum*.

Below the anterior angle of the *pudendum* the *clitoris* is placed, which rises by two *crura* or branches, from the upper part of the *rami* of the *ischia*. The external part of the *clitoris* is called the *glans*, which has a prepuce or thin covering, to which the *nymphæ* are joined. The *clitoris* is sup-

posed to be the principal seat of pleasure, and to be capable of some degree of erection, in the act of coition.

The *nymphæ* are two small spongy bodies, or doublings of the skin, rising from the extremities of the prepuce of the *clitoris*, and resembling in their form the *labia*. They pass on each side of the *pudendum*, within the *labia*, to about half its length, when they are gradually diminished till they disappear.

Immediately below the inferior edge of the *symphysis* of the *os pubis*, between the *nymphæ*, is the *meatus urinarius*, or termination of the *urethra*, which is about one inch and a half in length, and runs in a straight direction along the internal surface of the *symphysis*, to which and to the *vagina* it is connected by cellular membrane, to the bladder. On each side of the *meatus* are small orifices, which discharge a mucus, for the purpose of preserving the external parts from any injury, to which they might be liable from the acrimony of the urine.

There is a very great difference in the appearance of all these parts, especially in those who have had many children, and at various periods of life. In young women they are firm and vegete, but in the old, these, together with the internal parts, become flaccid and withered.

SECTION II.

THE external parts of generation are subject to many diseases in common with the other parts of the body. They are also exposed to some peculiar complaints, and to accidents at the time of parturition, of which we ought to be well informed, that we may by our care prevent them, or give such relief as may be required when they are unavoidable.

The *labia* and *nymphæ*, as might be expected from their fatty and cellular texture, are liable to elongation, to excrescences, and to fchirrous tumours, which in some instances have grown to an enormous size.

It is not unusual for one of the *labia* to be larger and more pendulous than the other; but the enlargement or elongation are not regarded as diseases till some inconvenience is produced by them. The same observation may be made of excrescences or fchirrous tumours, which are therefore found to have acquired a considerable size before they are divulged.

In all the subordinate degrees of these complaints, when there is reason to think that they arise from some constitutional cause, relief may be

given by such medicines or treatment as will alter and amend the general health. Or if they are owing to any specific cause, as the venereal disease, of which excrescences in particular are a very frequent consequence, mercurial medicines are to be used or given, till we are certain that the constitution is freed from the infection. Applications suitable to the state they are in, are at the same time necessary, and of these there will be occasion to use a variety, from the most emollient and soothing, which may be proper when the parts are in a very irritable or inflamed state, to those which have different degrees of escharotic qualities, when we presume there is a chance of removing the excrescences by such means. But when complaints of this kind have been of long continuance, or when the parts have increased to such a size as to hinder the common offices of life, there is but little reason to hope for their removal by any application, and the diseased part must be extirpated with the knife; which operation may be performed with safety, and the fairest prospect of success. As the blood-vessels are few, and naturally small in proportion to the size of the parts, there is not much danger of a hemorrhage, though, in some cases, this is said to have been alarming and extremely difficult to manage. But I have more than once seen the enlarged

nymphæ

nymphæ and several excrescences, of a considerable size, removed by the knife at the same time, yet the surgeon has not been under the necessity of tying a single blood-vessel.

Œdematoſe swellings of the external parts may occur, either in a general anasarcaous state of the whole body, or when any cause produces a temporary pressure upon those vessels which are intended to conduct the returning fluids from the inferior extremities, particularly the enlarged *uterus*, during pregnancy. Whatever may be the cause of these swellings, if they should increase so as to become troublesome, the method of giving relief is obvious and easy, as it consists only in making a few slight scarifications in different parts of the *labia*, by which the stagnating fluids will be discharged, and the *labia* reduced to their natural size. It is not unusual for these swellings to return two or three times towards the conclusion of pregnancy; in which case, or even in the time of labour, the scarifications may be repeated. A flannel wrung out of some emollient fomentation will contribute to the easy and perfect discharge of the fluids.

The cohesion of the *labia* to each other has been mentioned as a complaint occurring to adult women, especially in hot climates, if inflammation, preventing the due secretion of the mucus, with

with which these parts are naturally clothed on their internal surface, should take place, or if they should be excoriated by any accidental cause, and neglected in that state. The *labia* will also very frequently cohere in children, in such a manner as to leave no vestige of a passage into the *vagina*, except at the anterior part, for the discharge of the urine, and make us apprehend a defect in the organization of the parts. In such cases, we have been directed to separate them with the knife, and how far such an operation may be necessary in the adult, if the parts should cohere either in consequence of some new affection, or if a cohesion originating in infancy should continue to adult age, must depend upon the judgment of the surgeon. But in infants such an operation is neither requisite or proper, because a separation may always be made by a firm and somewhat distracting pressure upon each *labium* at the same time, which scarcely makes the child complain; though the small vessels which had inosculated from one *labium* to the other, may be perceived to be dragged out during the continuance of the pressure.

It is extraordinary that so little notice should have been taken of a complaint which is very frequent in children, but it is probable that the constant and free use of their limbs, when they begin to walk, causes a separation, otherwise the

cohesion must often have occurred in adults, in whom the case is very rare. When a separation of the cohering *labia* has been made in the manner before mentioned, a folded piece of linen, moistened in a weak solution of the *vitriolum album*, or some lightly astringent liquor, should be applied every night when the child is put to rest, to prevent the re-union, to which there is a great disposition; and which will certainly take place if the *labia* are suffered to remain in contact.

In consequence of violent inflammation from accidental or other causes, the *labia* become tumefied, and a large abscess is sometimes formed. This is attended with extreme pain, the desire of relieving which, has induced surgeons to open the abscess, and give vent to the matter as soon as it could be perceived to fluctuate. But though the pain may, for the present, be abated by the early discharge of the matter, the part continues indurated, is indisposed to heal, and sometimes becomes fistulous. But if the abscess is suffered to break of its own accord, the part has the kindest tendency to heal, and the cure is soon perfected. Should the pain be extreme during the suppuration, besides the use of fomentations and cataplasms, recourse must be had to opiates.

Though the *perinæum* is not often affected with diseases, it is subject to a laceration from the dis-tention

tention which it undergoes, when the head of the child is passing through the external parts. This laceration, which is most likely to happen with first children, though with rude treatment or neglect it may occur with subsequent ones, especially in those women who have the *perinæum* naturally short, differs in direction and extent, and may be in every degree from the *frænum* or edge of the *perinæum*, to the extremity of the *spincter ani*, or even higher up into the *rectum*.

That some degree of laceration should occur will not be surprizing, if we consider the great change and violence which all these parts sustain at the time when the head of the child is passing through them; or when a laceration begins, that it should extend through a part spread extremely thin, and suffering an equal degree of force. When the *perinæum* is indisposed to distend, or if when distended it cannot permit the head of the child to pass with facility, the anterior part of the *rectum* is dragged out, and gives to the *perinæum* a temporary elongation. The true *perinæum*, and the temporary, as it may be called, thus forming an equal, uninterrupted space, if a laceration should commence at any part, it might extend through the whole. Of the method by which the laceration may be prevented, and of the treatment which may be proper when it has occurred, we

shall

shall speak in other places. At present we shall enquire into the causes of an accident; the prevention of which, is the principal object of our attention in natural labours.

Though no means are used to prevent the laceration of the *perinæum* in quadrupeds at the time of parturition, it is remarkable that they are very rarely or never liable to it, except in those cases in which the necessity of their situation is supposed to require assistance; and this being given with ignorance and violence, may properly be esteemed the cause of the accident. It is therefore reasonable to presume, that the frequent occurrence of this accident in the human species, allowing that it is in some cases unavoidable, ought to be imputed to some accidental cause, or to error in conduct, rather than to any peculiarity in the construction of the part, or in the circumstances of their parturition. For, I believe, no observation is more generally true, than that of the existence of a power in the structure and constitution of animals, for overcoming all the difficulties to which they are, at the time of parturition, naturally subject; which power is exerted with a degree of energy proportionate to the difficulty.

The causes disposing to, and capable of, producing a laceration of the *perinæum*, seem to be these

First, The increased tenderness and delicacy of the skin. That this and every other part of the body may, by alteration from its natural state, become more susceptible of pain, and less able to bear violence of any kind, is clearly proved by the different degrees of those properties, in parts of the body which are usually clothed or uncovered.

Secondly, The position of women at the time of delivery. Women in this country, at the present time, are placed in bed upon their left side, with their knees drawn up towards the *abdomen*; which position, though convenient to the attendant, seems to occasion a projection of the part of the child which presents, in a line unfavourable to the *perinæum*. But if they were placed upon their hands and knees, which is a position instinctively sought for, and often recommended in cases of difficulty and distress, and perhaps the most natural, then the head or part presenting would, by its gravitation, lessen the pressure upon the *perinæum*, and of course the hazard of its laceration.

Thirdly, The disturbance of the order of a labour. Every change which is made in the parts at the time of labour is successive, and every pain seems to produce two effects; it dilates one part, and gives some other part a disposition to be dilated.

dilated. If therefore by hurry, or imprudent management, the head of the child, in its passage through the *pelvis*, is brought into contact with parts which have not yet acquired their disposition to dilate, or if by artificial dilatation we attempt to supply the want of the natural, the parts will sooner be lacerated than distended.

Fourthly, When animals bring forth their young, the effort to expel is instinctive, no part of the force being voluntary. Women, on the contrary, either from erroneous opinions, or from false instructions, exert a considerable degree of voluntary force, with the hope and intention of finishing their labours speedily. If we suppose that the *perinæum* is able to bear all the force instinctively exerted without injury, but no greater, then the whole voluntary force, will, in proportion to its degree, induce the danger of a laceration, unless its effect is counteracted by some adventitious help. On this principle it is usual to support the *perinæum*, not with the view of altering the direction of the head of the child, but to retard its passage through the external parts. For the *perinæum* is not torn because the head of the child is large, or passes in any particular direction, but because it passes too speedily, or presses too violently upon the parts, before they have acquired their dilatability; it therefore very rarely

happens that the *perinæum* is lacerated in difficult labours.

That kind of laceration of the *perinæum*, which commences at the anterior edge, and runs obliquely or directly backwards, is alluded to in every dissertation upon this subject. But there have been instances of another kind, which may be called a bursting or perforation of the *perinæum*, at that part which is connected with the circumference of the *anus*, when the anterior part is preserved. In a case which occurred in my own practice, I was sensible of the laceration before the expulsion of the head, which I guided through the natural passage, supplying the want of the *perinæum* with the palm of my hand. The external parts were, in this patient, extremely rigid and contracted; and as I applied myself with great assiduity to preserve them, I imputed the accident to this circumstance, rather than to the necessity of the case. She did not make any unusual complaint immediately after delivery; but on the following day, there was a violent inflammation of the parts, with a suppression of urine, and the *lochia* were discharged through the ruptured part, though no *fæces* ever came by the *vagina*. By the use of fomentations and cataplasms, of cooling laxative medicines, and occasionally of opiates, the inflammation was soon abated. The suppuration

ration being profuse, the bark was given, and at the end of ten weeks the lacerated parts were healed. No particular examination was ever made during the cure, and none but superficial dressings applied. When I attended this patient with her second child, I observed a large round cicatrice at the rugous part of the *anus*, but she suffered no inconvenience from it, and recovered as well as if no such accident had formerly happened.

The *clitoris* is little concerned in the practice of midwifery, on account of its size and situation. It is sometimes elongated and enlarged in such a manner as to equal the *penis*, being one of those many peculiarities which is supposed to constitute an hermaphrodite, or an animal partaking of the sexual properties of the male and female; but the term is in this case improperly used.

Should the *clitoris* increase to such a size as to occasion much inconvenience, it may be extirpated either with the knife or ligature; but if the cause of the enlargement, which is commonly assigned, be true, it is probable that no motive of delicacy or inconvenience will be a sufficient inducement to suffer the pain of extirpation.

The bladder and *urethra* in women are liable to fewer diseases than the same parts in men, because their construction is more simple, and their

their use wholly confined to the reception and conveyance of the urine. Women have, nevertheless, a stone sometimes formed in the bladder, and it has been thought an improvement in practice to evade the operation of lithotomy, by distending with bougies, gradually enlarged, the *urethra*, till it is of sufficient dimensions to allow a stone to pass through it. It is proved, by experience, that the *urethra* may be sufficiently distended to allow a small stone to pass; but if the distention be carried beyond a certain degree, the tone of the part will be destroyed, and the patient ever remain subject to an involuntary discharge of urine, which is a greater evil than any consequent to lithotomy.

In the course of the *urethra*, and about the *meatus urinarius*, excrescences sometimes grow which produce symptoms equally troublesome, and similar to those which are caused by the stone in the bladder. These may be extirpated by the knife, by ligature, by caustic applications, or by wearing bougies, according to their size, or the part where they grow, which may render one more convenient or preferable to the rest.

The *pruritus*, or itching of the external parts, is a complaint to which women are liable at any period of life, but it is most frequently attendant on the state of pregnancy, of which it is one of

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the most troublesome consequences. If it affects the internal parts, or is excessive in its degree, it is said to terminate in the *furor uterinus*. It is sometimes occasioned by a disease or affection of the bladder, and is then equivalent to the itching of the *glans penis* in men; but it more commonly proceeds from some affection of the *uterus*, having most frequently observed it to occur in pregnancy, especially when the child was dead, or at the time of the final cessation of the *menses*.

The means used for the relief of the patient must depend upon the seat, the cause, and the degree of the complaint. When it happens during pregnancy, and at all other times, if attended with inflammation, it is necessary to bleed, to give gently laxative medicines, and to use sedative applications, of which perhaps the best is a weak solution of *saccharum saturni*, as a lotion; or a decoction of poppy heads, with a small quantity of *saccharum saturni* dissolved in it, as a fomentation. More active applications are often prescribed; but I have suspected that these, in many cases, rather aggravate than abate the complaint. If the patient be pregnant, the attempt to cure it will be vain, and we must be satisfied with moderating it till she is delivered, when it will cease spontaneously. When this disease originates from the *uterus*, such medicines must be used as

promise relief to the *uterus*; and I have frequently given five grains of Plummer's pill every night at bed-time, and a pint of a strong decoction of *sarsaparilla* every day for a month with advantage, though there was no reason to suspect any venereal infection, of which the itching is, I believe, a very unusual symptom. But when it is caused by a disease of the bladder, the constant or daily use of a bougie in the *urethra* has, in some cases, effectually cured the patient.

SECTION III.

THE *hymen* is a thin membrane of a semilunar or circular form, placed at the entrance of the *vagina*, which it partly closes. It has a very different appearance in different women, but it is generally, if not always, found in virgins, and is very properly esteemed the test of virginity, being ruptured in the first act of coition, and the remnants of the *hymen* are called the *carunculae myrtiformes*. The *hymen* is also peculiar to the human species; from which circumstance a moral writer might draw inferences favourable to the estimation of chastity in women.

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There are two circumstances relating to the *hymen* which require medical assistance. It is sometimes of such a strong ligamentous texture, that it cannot be ruptured, and prevents the connexion between the sexes. It is also sometimes imperforated, and wholly closes the entrance into the *vagina*; but both these cases are extremely rare.

If the *hymen* be of an unnaturally firm texture, but perforated, the inconveniences thence arising will not be discovered before the time of marriage, when they may be removed by a crucial incision made through it, taking care not to injure the adjoining parts.

But the imperforation of the *hymen* will produce its inconveniences, when the person begins to menstruate. For the menstrual blood being secreted from the *uterus* at each period, and not evacuated, the patient suffers much pain from the distention of the parts, many strange symptoms and appearances are occasioned, and suspicions prejudicial to her reputation are entertained. In a case of this kind, for which I was consulted, the young woman, who was twenty-two years of age, having many uterine complaints, with the *abdomen* enlarged, was suspected to be pregnant, though she perfevered in asserting the contrary, and had never menstruated. When she was pre-

vailed upon to submit to an examination, the circumscribed tumour of the *uterus* was found to reach as high as the navel, and the external parts were stretched by a round soft substance at the entrance of the *vagina*, in such a manner as to resemble that appearance which they have when the head of a child is passing through them; but there was no entrance into the *vagina*. On the following morning an incision was carefully made through the *hymen*, which had a fleshy appearance, and was thickened in proportion to its distention. Not less than four pounds of blood, of the colour and consistence of tar, were discharged, and the tumefaction of the *abdomen* was immediately removed. Several stellated incisions were afterwards made through the divided edges, and care was taken to prevent a re-union of the *hymen* till the next period of menstruation, after which she suffered no inconvenience. The blood discharged was not putrid or coagulated, and seemed to have undergone no other change, after its secretion, but what was occasioned by the absorption of its more fluid parts.

The *carunculae myrtiformes*, by their elongation and enlargement, sometimes become very painful and troublesome. Under such circumstances they may be managed, or extirpated, if requisite, in the same manner as the diseased *nymphæ*.

SECTION IV.

On the internal Parts of Generation.

THE internal parts of generation are the *vagina*, the *uterus*, the *fallopian* tubes, and the *ovaria*. The ligaments may be esteemed appendages to the *uterus*.

That canal which leads from the *pudendum*, or external orifice, to the *uterus*, is called the *vagina*. It is somewhat of a conical form, with the narrowest part downwards, and is described as being five or six inches in length, and about two in diameter. But it would be more proper to say, that it is capable of being enlarged to those dimensions; for in its usual state, the *os uteri* is seldom found to be more than two inches from the external orifice.

The *vagina* is composed of three coats, the first, or innermost of which, is villous, interspersed with many excretory ducts, and contracted into *plicæ*, or small transverse folds, particularly at the fore and back part, but by child-bearing these are obliterated. The second coat is composed of muscular fibres and minute blood-vessels; and the third, or outer coat, is from the cellular membrane,

brane, by which it is connected to the adjoining parts.

The entrance of the *vagina* is constricted by muscular fibres, originating from the *rami* of the *pubis*, which run on each side of the *pudendum*, surrounding the posterior part, and executing an equivalent office, though they cannot be said to form a true *sphincter*.

The upper part of the *vagina* is connected to the circumference of the *os uteri*, but not in a straight line so as to render the cavity of the *uterus* a continuation of that of the *vagina*; for the latter stretches beyond the former, and being joined to the *cervix*, is reflected over the *os uteri*, which, by this mode of union, is suspended with protuberant lips in the *vagina*, and permitted to change its position in various ways and directions.

The form of the *uterus* resembles that of an oblong pear, flattened, with the depressed sides placed towards the *pubis* and *sacrum*; but in the impregnated state it becomes more oval, according to the degree of its distention.

For the convenience of description, and for some practical purposes, the *uterus* is distinguished into three parts; the *fundus*, body, and *cervix*. The upper part is called the *fundus*, the lower, the *cervix*, and the space between them, which is undefined, the body. The *uterus* is about three inches

inches in length, about two in breadth at the *fundus*, and one at the *cervix*. Its thickness is different at the *fundus* and *cervix*, being at the former rather less than half an inch, and at the latter somewhat more; and this thickness is preserved throughout pregnancy, chiefly by the enlargement of the veins and lymphatics, there being little comparative alteration in the size of the arteries. But there is such variety in the *uterus* in different women, independent of the states of virginity, or marriage, or pregnancy, as to prevent any very accurate mensuration.

The cavity of the *uterus* corresponds with the external form. That of the *cervix* leads from the *os uteri*, where it is very small, in a straight direction, though a little wider in the middle, to the *fundus*, where it is expanded into a triangular form, with two of the angles opposed to the entrance into the fallopian tubes. There is a swell, or fullness of all the parts, towards the cavity, which is sometimes distinguished by a prominent line running through its middle.

The villous coat of the *vagina* is continued over the *os uteri*, and lines the cavity of the *uterus*. The internal surface of the *uterus* is corrugated in a beautiful manner, but the *rugæ*, which are longitudinal, lessen as they advance into the *uterus*, the *fundus* of which is smooth.

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In the intervals between the *rugæ* are small orifices, like those in the *vagina*, which discharge a mucus, serving, besides other purposes, that of closing the *os uteri* very curiously and perfectly during pregnancy.

The substance of the *uterus*, which is very firm, is composed of arteries, veins, lymphatics, nerves, and muscular fibres, curiously interwoven and connected together by cellular membrane. To these, according to some anatomists, are to be added glands, ligamentous and parenchymatous substances.

The arteries of the *uterus* are the *spermatic* and *hypogastric*.

The *spermatic* arteries arise from the anterior part of the *aorta*, a little below the emulgents, and sometimes from the emulgents. They pass over the *psoas* muscles, behind the *peritonæum*, enter between the two *laminæ*, or duplicatures of the *peritonæum*, which form the broad ligaments of the *uterus*, proceed to the *uterus*, near the *fundus* of which they insinuate themselves, giving branches in their passage to the *ovaria* and *fallopian tubes*.

The *hypogastric* arteries arise from the internal *iliacs*, and passing down the inside of the *pelvis*, divide into three branches, the anterior of which retains the name of *hypogastric*, the middle is called the *pudica interna*, and the third the *sciatica*.

The first is the remnant of the umbilical artery, and is reflected over the side of the bladder, where it soon becomes impervious; the second goes from the sides of the *pelvis* to the edges of the *uterus*, which it enters at the upper part of the *cervix*, and then penetrating the substance of the *uterus*, divides into two branches, the smallest of which runs along the *os uteri* to the *vagina*; but the larger passes with many convolutions to the upper part of the *uterus*, where its branches anastomose with those of the spermatic artery. The hypogastrics in their passages to the *uterus* detach branches to the bladder and adjoining parts.

The veins which reconduct the blood from the *uterus* are very numerous, and their size in the unimpregnated state corresponds to that of the arteries; but their enlargement during pregnancy is such, that the orifices of some of them when divided will admit of a quill, or the end of a small finger. The veins anastomose in the manner of the arteries, which they accompany out of the *uterus*, and then having the same names with the arteries, spermatic and hypogastric, the former proceeds to the *vana cava* on the right side, and on the left to the emulgent vein; and the latter to the internal iliacs.

From the substance and surfaces of the *uterus* an infinite number of lymphatics arise, which following

ing the track of the blood-vessels, pass to the glands lying in an angle made by the departure of the emulgents from the trunk of the descending *aorta*.

The *uterus* is supplied with nerves from the lower mesocolic *plexus*, and from those which pass through the perforations of the *sacrum*, which also send large branches to the bladder and *rectum*. The *ovaria* receive a few small branches of nerves through the broad ligaments, but their principal ones are from the renal *plexus*. By the great number of nerves these parts are rendered extremely irritable; but it is by those branches which the *uterus* receives from the intercostal, that the intimate consent between it and various other parts is chiefly preserved.

The muscular fibres of the *uterus* have been described in a very different manner by anatomists, some of whom have asserted that its substance was chiefly muscular, whilst others have contended that there were no muscular fibres whatever in the *uterus*. In the unimpregnated *uterus*, when boiled for the purpose of a more perfect examination, the former seems to be a true representation. When the *uterus* is distended towards the latter part of pregnancy, these fibres are very thinly scattered, but they may be discovered in a circular direction about the *cervix*, and surrounding the entrance of each fallopian tube. Yet it does not seem reasonable

able to attribute the extraordinary action of the *uterus* at the time of labour to its muscular fibres only, if we are to judge of the power of a muscle by the number of fibres of which it is composed, unless it is presumed that those of the *uterus* are stronger than in common muscles.

With respect to the glands of the *uterus*, these are not discoverable in its natural state; but from the number of lymphatics which proceed from it, and from its appearance in a morbid state, there can be little doubt of their existence. By the term *parenchyma* has been understood a spongy substance of a softer and less vascular texture than the other constituent parts of any of the *viscera*, and of this there is said to be a certain portion in the *uterus*: but modern anatomists do not allow it, or that there is any distinct ligamentous substance to be found in the structure of the *uterus*. On this and many other occasions one has to lament the want of precision in the terms used for the explanation of the same ideas, from which much confusion has arisen, and many disputes have been carried on with unpardonable acrimony; not in the vindication of truth, but in the support of words.

From the angles at the *fundus* of the *uterus* two processes, of an irregularly round form, originate, called the *fallopian* tubes, which are evidently continuations of the substance of the *uterus*, but some-

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what thinner. They are about three inches in length, and becoming smaller in their progress from the *uterus*, have an uneven, fringed termination, called the *fimbriæ*. The canal which passes through these tubes is extremely small at their origin, but it is gradually enlarged, and terminates with a patulous orifice, the diameter of which is about one third of an inch, surrounded by the *fimbriæ*. Through this canal the communication between the *uterus* and *ovaria* is preserved. The *fallopian* tubes are wrapped in duplicatures of the *peritonæum*, which are called the broad ligaments of the *uterus*, but a portion of their extremities thus folded hangs loose on each side of the *pelvis*.

The *ovaria* are two flat oval bodies, about one inch in length, and rather more than half in breadth and thickness, suspended in the broad ligaments, at about the distance of one inch from the *uterus*, behind, and a little below the *fallopian* tubes.

To the *ovaria*, according to the idea of their structure entertained by different anatomists, various uses have been assigned, or the purpose they answer has been differently explained. Some have supposed that their texture was glandular, and that they secreted a fluid equivalent to and similar to the male *semen*; but others, who have examined them with more care, assert that they are *ovaria* in the literal acceptation of the term, and include a

number

number of vesicles or *ova*, to the amount of twenty-two of different sizes, joined to the interal surface of the *ovaria* by cellular threads or pedicles, and that they contain a fluid which has the appearance of thin lymph. All have agreed that the *ovaria* prepare whatever the female supplies towards the formation of the *fætus*, and it is proved by the operation of spaying, which consists in the extirpation of the *ovaria*; for the animal not only loses the power of conceiving, but desire is for ever extinguished.

The outer coat of the *ovaria* is given by the *peritonæum*, and whenever an *ovum* has passed into the *fallopian* tube, a fissure may be observed at the part through which it is supposed to have been transferred. These fissures healing, leave small longitudinal cicatrices on the surface, which are said to enable us to determine whenever the *ovarium* is examined, the number of times a woman has conceived.

The *corpora lutea* are oblong glandular bodies of a yellowish colour, found in the *ovaria* of all animals when pregnant, and according to some when they are falacious. They are said to be the *calyces* from which the impregnated *ovum* has dropped, and their number is always in proportion to the number of conceptions found in the *uterus*. They are largest and most conspicuous in the early

state of pregnancy, and remain for some time after delivery, when they gradually fade and wither till they disappear. The *corpora lutea* are extremely vascular, except at their centre, which is whitish, and in the middle of the white part is a small cavity, from which the impregnated *ovum* is thought to have proceeded.

From each lateral angle of the *uterus*, a little before and below the *fallopian* tubes, the round ligaments arise, which are composed of arteries, veins, lymphatics and nerves, arranged in a very curious manner, connected by cellular membrane, and much enlarged during pregnancy. They receive their outward covering from the *peritonæum*, and pass out of the *pelvis* through the rings of the abdominal muscles to the groin, where the vessels subdivide into small branches, and terminate at the *mons veneris* and contiguous parts. From the insertion of these ligaments into the groin, the reason appears why that part generally suffers in all the diseases and affections of the *uterus*, and why the inguinal glands are in women so often found in a morbid or enlarged state.

The duplicatures of the *peritonæum*, in which the *fallopian* tubes and *ovaria* are involved, are called the broad ligaments of the *uterus*. These prevent the entanglement of the parts, and are conductors of the vessels and nerves, as the me-

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sentery is of those of the intestines. Both the round and broad ligaments alter their position during pregnancy, and they are supposed to prevent the descent of the *uterus*, and to regulate its direction when it ascends into the cavity of the *abdomen*.

S E C T I O N V.

THE diseases of the internal parts of generation will be best understood if they are described in the order observed in the description of the parts.

The diseases of the *vagina* are, first, such an abbreviation and contraction as renders it unfit for the uses for which it was designed; secondly, a cohesion of the fides in consequence of preceding ulceration; thirdly, cicatrices, after an ulceration of the parts; fourthly, excrescences; fifthly, *fluor albus*.

The abbreviation and contraction of the *vagina*, which usually accompany each other, are produced by original formation, and they are discovered at the time of marriage, the consummation

tion of which they prevent. The curative intentions are, to relax the parts by the use of emollient applications, and to dilate them to their proper size by sponge, or other tents gradually enlarged. But the circumstances which attend, are sometimes such as might lead us to form an erroneous opinion of the disease. A case of this kind which was under my care, from the strangury, from the heat of the parts, the profuse and inflammatory discharge, was suspected to proceed from venereal infection, and the patient had been put upon a course of mercurial medicines for several weeks without relief. When she applied to me, I prevailed upon her to submit to an examination, and found the *vagina* rigid, and so much contracted as not to exceed half an inch in diameter, and not more than one inch and a half in length. The repeated, though fruitless, attempts which had been made to complete the act of coition, had occasioned a considerable inflammation upon the parts, and all the suspicious appearances beforementioned. To remove the inflammation, she was bled, took some gently purgative medicines, used an emollient fomentation, and afterwards some unctuous applications; she was also advised to live separate from her husband for some time. The inflammation being gone, tents of various sizes were introduced into the

vagina,

vagina, by which it was distended, though not very amply. She then returned to her husband, and in a few months became pregnant. Her labour, though slow, was not attended with any extraordinary difficulty, and she was delivered of a healthy child.

By the violence or long continuance of a labour, or by the negligent and improper use of instruments, an inflammation of the external parts, or *vagina*, is sometimes produced in such a degree as to endanger a mortification. By careful management, this consequence is usually prevented; but in some cases, when the constitution of the patient was prone to disease, the external parts have sloughed away, and in others equal injury has been done to the *vagina*. But the effect of the inflammation is confined to the internal or villous coat, which is cast off wholly or partially. An ulcerated surface being thus left, when the disposition to heal has taken place, cicatrices are formed of different heads, according to the depth and extent of the ulceration; and there being no counteraction to the contractile state of the parts, the dimensions of the *vagina* become much reduced. Or if the ulceration should not be healed, and the contractility of the parts continue to operate, the ulcerated surfaces being brought together, may cohere, and the canal of

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the *vagina* be perfectly closed. By proper attention at the time of healing, this complaint might be prevented or lessened, and as it differs in degree and situation, the inconveniences thence arising will vary in importance, and admit of relief with greater or less difficulty.

Cicatrices in the *vagina* very seldom become an impediment to the connexion between the sexes; when they do, the same kind of assistance is required as was recommended in the natural contraction or abbreviation of the part; and, I believe, they always give way to the pressure of the head of the child in the time of labour, though in many cases with great difficulty. Sometimes the appearances may mislead the judgment, for I was lately called to a woman in labour who was thought to have become pregnant, the *hymen* remaining unbroken. But on making very particular enquiry, I discovered that this was her second labour, and that the part which we supposed to be the *hymen*, with a small aperture from its form and situation, was a cicatrice, or unnatural contraction of the entrance into the *vagina*, consequent to an ulceration of the part after her former labour.

When the sides of the *vagina* cohere together, it may be requisite to separate them with the knife; and when they are in a healing state, their

re-union may be prevented by tents, or by a leaden canula of a proper size, introduced into and worn in the *vagina*. But if the cohesion has taken place far up in the *vagina*, the knife must be used with the utmost circumspection, or irreparable injury may be done to the bladder, *rectum*, or some adjoining part. A patient who applied to me for relief in this complaint, and in whom the menstrual blood was secreted, though it could not be discharged, was advised to defer any operation; as I presumed the menstrual blood, at some future time, would protrude the cohering part in such a manner as to render the operation more secure, effectual, and easy.

Fungous excrescences arising from any part of the *vagina* or *uterus*, are distinguished by the general term *polypus*. These are of different sizes, and may sprout from any part of the cavity of the *uterus*, and perpend in the *vagina*; or from the *os uteri*, or from the *vagina*. The texture of the excrescences is also very different, being in some cases firm and fleshy, and in others fungous and almost as soft as coagulated blood; some of them hang by a small pedicle, and others have a broad basis.

The cause of the *polypus* may be some accidental injury done to the part at the time of la-

bour, or a spontaneous disease of the part itself, or of the constitution. Those which are of a small size are no impediment to conception or parturition, at least if they originate from the *os uteri* or *vagina*.

In the first stage, the *polypus* may be accompanied with all those symptoms which proceed from uterine irritation, and in its progress, with a mucous, fainous, and afterwards a sanguineous discharge; by which, and the constant pain, the patient is reduced to extreme weakness, and if relief is not given, she may perish from the mere loss of strength.

The *polypus* may be extirpated by ligature or excision; but the former is the preferable method, and the ligature is to be used in a similar manner, and upon the same principle, as in the extirpation of nasal *polypi*. The difficulty lies in the proper application of the ligature, and this depends upon the distance of the part to be tied from the external orifice, and the breadth of the basis of the *polypus*. If the circumstances of the case will admit of delay, the operation will be rendered more easy, as the tumour will descend lower, and the pedicle become longer and thinner. When the ligature is fixed, it must be drawn gradually tighter every day till the excrescence drops off, which usually happens in four or five days, though the time will

will depend upon the firmness and thickness of the pedicle of the *polypus*. It should be a general rule not to pass a ligature for the extirpation of a *polypus*, unless we can feel the pedicle by which it grows, or we may be in danger of tying a part we did not intend; and we must carefully distinguish the *polypus* from an inverted *uterus*. Should the base of the *polypus* be larger, or as large as the excrescence, the ligature cannot be fixed in the usual manner, for it will either slide over it, or take a partial hold of the *polypus*. Such cases have usually a cancerous or schirrous disposition.

The *polypus* has sometimes terminated favourably without assistance, or with assistance of a different kind. After a long continuance of the disease, which has not been suspected, or mistaken for some other, the tumour has pressed through the *vagina* and external orifice, and the pedicle being too weak to sustain its weight, it has decayed and dropped away. Or, when the tumour has pushed through the external orifice, a ligature has been fixed round the pedicle, and the *polypus* has been perfectly and easily extirpated.

A mucous, ichorous, or fainous discharge from the *vagina* or *uterus*, is called the *fluor albus*. These discharges are various in their degrees as in their kinds, from a simple increase of the na-

tural *mucus* of the part, to that which is of the most acrimonious quality; but the first is not esteemed a disease, unless it is excessive in its degree. It is the most frequent disease to which women are liable, and is by them suspected to be the cause of every complaint which they may at the same time suffer; but it is generally a symptom of some local disease, or a consequence of great debility of the constitution, though, when profuse, it becomes a cause of greater weakness. In many cases the *fluor albus* is an indication of a disposition to disease in the *uterus*, or parts connected with it, especially when it is copious in quantity, or acrimonious in quality, about the time of the final cessation of the *menstruæ*.

The symptoms attending the *fluor albus*, whether it be an original disease, or a symptom of other diseases, are very similar. The complexion is of a pale, yellowish colour, the appetite is depraved, there is invariably a pain and sense of weakness in the back and loins, the patient has constantly a feverish disposition, with a wasting of the flesh and reduction of the strength, and ultimately becomes hectic or leucophlegmatic.

The method of relieving or curing the *fluor albus* must depend upon its cause, whether the discharge proceeds from the *uterus* or *vagina*. When it is occasioned by general weakness of the

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constitution, all those medicines which are classed under the general term of corroborants or tonics, especially bark and chalybeates, may be given, under a variety of forms, with great advantage. But their effect is not immediate; and previously to their use, it will be proper and necessary that the patient should take some mild purgatives, and in all cases where there is any feverish disposition, she ought to lose some blood. Balsamic and agglutinating medicines of every kind are also frequently prescribed, but without much benefit. In some cases mercurial medicines have been given with advantage, when there was no suspicion of any venereal infection. Gentle emetics have been recommended, and are supposed to be of singular use, not only by cleansing the *primæ viæ*, or by making a revulsion of the humours from the inferior parts, but by exciting the powers of the constitution to more vigorous action. Cold bathing, partial or general, particularly in the sea, has often been of eminent service. In this, and all similar complaints, good air, moderate exercise, nourishing and plain diet, and a regular manner of living, will of course be advised.

When there is reason to think that the complaint is local, and arises from the relaxation of those orifices by which a necessary *mucus* is discharged on particular occasions; or if the discharge

should continue after an amendment of the constitution, injections of various kinds may be used; but the safest and best are those which are composed from astringent vegetables, or weak solutions of *saccharum saturni* or *vitriolum album*, and though they cannot well be expected to produce an absolute cure, they seldom fail to afford temporary benefit, which is a great comfort to the patient.

S E C T I O N VI.

THE *uterus* is liable to many diseases, and being a part with which the whole body is readily drawn into consent, there is scarce a disease, under which women have at any time laboured, but what has been attributed to its influence. Yet it is not proved that there is any essential difference in those diseases of women to which men are equally subject, though there is some variety in the symptoms. We shall confine our attention to the most obvious diseases of the *uterus*, and begin with the *prolapsus* or *procidentia*, which very frequently occurs.

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By the *prolapsus* is meant a subsidence or descent of the *uterus* into the *vagina*, lower than its natural situation, and it is termed a *procidentia* when the *uterus* is pushed through the external orifice of the *pudendum*. This sometimes happens to such a degree as to put on the appearance of a tumour growing from the external parts, depending very low between the thighs, causing great pain and uneasiness, and rendering the patient unable to perform the common offices of life. A moderate share of circumspection will enable us to distinguish the *procidentia* of the *uterus* from its inversion, and from all resembling diseases.

There are many causes of the *prolapsus* or *procidentia* of the *uterus*, as long standing during the time of pregnancy, carrying heavy burdens, and all sudden and violent exertions of the body, whence they most frequently happen to women in the lower ranks of life. They may be occasioned by the circumstances of a labour, as the descent of the *os uteri* into the *pelvis*, before it is dilated, by the preposterous efforts of the woman in an erect position, by the rude and hasty extraction of the *placenta*, and by rising too early after delivery. They may also be produced by mere relaxation of the parts, as unmarried women are sometimes subject to them, though

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less frequently than those who have had children. By the knowledge of the causes of these complaints we are led to their prevention and cure ; and it is worthy of observation, that when a *prolapsus* or *procidentia* has been occasioned by the circumstances of one labour, they may be relieved or perfectly cured by care and long confinement in an horizontal position after the next. When women who have a *prolapsus* are pregnant, the inconveniences are increased in the early part of pregnancy, because the *uterus*, being enlarged, sinks lower than usual into the *vagina* ; but in the latter part they are lessened, as it is then supported above the brim of the *pelvis*. But when the *pelvis* is very capacious, and the parts much relaxed, the lower part of the *uterus*, including the head of the child, has in some cases been pushed through the external orifice, before the *os uteri* was dilated.

The *procidentia* is not, properly speaking, a disease of the *uterus*, but a change of its position, caused by the relaxation or weakness of those parts to which it is connected, and by which it should be supported. It accordingly most commonly happens, that the first tendency to it is discovered by the protrusion or fullness of the anterior part of the *vagina*, and sometimes also the posterior part of the *vagina* becomes tumid, forming a kind of pouch, and this is in some cases where there is

no descent of the *uterus*. But in the principal degrees of the *procidentia*, the position of the *uterus* and *vagina* is not only very much altered, but that of all the contiguous parts, especially the bladder.

The intentions in the cure of the *procidentia* are, to restore the *uterus* to its proper situation, and to retain or support it when replaced.

The reduction of the parts to their situation is not usually attended with much difficulty, even in the worst degrees of this complaint. In some cases, however, it is necessary by bleeding, gentle purgative medicines, and emollient fomentations, to lessen the inflammation and tumefaction; and when the *procidentia* or *prolapsus* occur soon after delivery, such means can only be used with propriety, as the parts are often in too irritable and tender a state to bear any other without mischief. When the parts are replaced, it will sometimes be proper to use local astringent applications in the form of a lotion or fomentation, conducted into the *vagina* by means of a syringe or sponge. But these will generally fail to answer our intention fully, and we shall be obliged to have recourse to pessaries, of which many have been contrived of various forms and substances.

The intention in the use of pessaries is to support the *uterus* in its situation, without injuring it or

the adjoining parts; but certainly the kinds now in common use are ill calculated for one or both these purposes, as they can neither be introduced or worn without inconvenience, and often fail to answer our intention. They are generally made of box or ebony wood, or of cork covered with wax; by some the circular form is preferred, by others, the oval, whilst others are persuaded that globular ones are the best. Some dexterity and judgment are required in their introduction; for if they are too small they will not remain in the *vagina*, and if too large, they inflame and ulcerate the parts, causing the strangury, obstinate costiveness, and many other painful symptoms. The size of those first used should be sufficiently large, and they may be gradually diminished till they are no longer necessary. When a pessary has been introduced, it is requisite that the patient should, for some time, be kept quiet and in an horizontal position, by which the present inconveniences will be lessened, and the good we expect to be derived from it will be increased.

Pessaries when introduced are chiefly supported by the *perinæum*; but if this should have been lacerated, the common ones cannot be used. A sort has for such cases been contrived with stems, to which ligatures are to be fixed, and then brought forwards and backwards to a bandage round the waist.

waist. These are always very troublesome, and are therefore never recommended, unless no other kind can be worn.

From the long continuance of a pessary in the *vagina*, and sometimes from the entanglement of the *os uteri* within the opening at its centre, there has been much difficulty when it was necessary to withdraw it. If it is possible to pass a piece of tape through the circular opening, and if we pull in a proper direction by both ends, with a firm and gradually increased force, so as to give the parts time to distend, we can hardly fail of success. But if that is not possible, the rim of the pessary must be divided by a pair of sharp strong *forceps*, of the kind used by watch-makers.

It has been observed that the use of a pessary does not hinder the act of coition or conception; and when a woman has a *prolapsus*, it is of great service that she should live with her husband.

An opinion was formerly entertained, that a *procidentia* of the *uterus* was beneficial in several other complaints to which women are liable, and that it was not proper to replace it; but I have never seen any reason for this opinion. In some cases it is also said, that the *uterus* could not be returned, from its long continuance, or from the increased bulk of the neighbouring parts; but I presume that all such cases might have been managed

by gentle evacuations, proper applications, and long confinement in an horizontal position.

Hydatids, or small vesicles, containing a watery fluid, are sometimes formed in the cavity of the *uterus*. These have been supposed to proceed from *coagula* of blood, or portions of the *placenta*, remaining in the *uterus*; but there is generally reason to think that they are an original production of the *uterus*, independent of such accidental circumstances.

The symptoms of this disease, are such as are common in all cases accompanied with an increased degree of uterine irritation, and as there is also a distention of the *abdomen* from the enlargement of the *uterus*, it is not surprising that these cases should be mistaken for pregnancy. In the early part of the disease, the symptoms, though troublesome, are not alarming; but about the termination of nine months, the *uterus* makes its efforts to expel them, and the attending circumstances are similar to those of a labour. If the hydatids should be expelled without the occurrence of any dangerous symptom, there is no occasion for our assistance or interference. But if a flooding should come on, or if the action of the *uterus* should be insufficient for their expulsion, it behoveth us to make gentle attempts to extract them, that the *uterus* may be at liberty to contract, and the ori-

fices of the vessels be thereby lessened. We must, however, act with great caution, lest we incur the danger of greater mischief than we mean to avoid.

There are upon record many histories of the dropfy of the *uterus*, which is described as a collection of water in its cavity, the *os uteri* being so perfectly closed as to prevent its escape. It is supposed to be occasioned by an increased secretion and a diminished absorption of lymph, as in collections of water in other cavities. The symptoms of the dropfy are the same as those which occur in the case of the hydatids, and when the action of the *uterus* comes on, which is usually imagined to be the patient's labour, after a sudden discharge of water, the *abdomen* subsides, and, though chagrined at her disappointment, she recovers her former health.

The common explanation of the manner in which the water is confined in the *uterus* seems unsatisfactory, and, in the few cases of this kind which I have seen, is not just. For in these, the water being discharged, a membranous bag was afterwards voided, which, when inflated, put on the form of the distended *uterus*, of which it appeared to be a lining. So that what has been called a dropfy of the *uterus*, is, probably, no more than one large hydatid.

Another

Another kind of dropfy has been mentioned as appertaining to the *uterus*. In this the water is originally contained in the cavity of the *abdomen*, and being absorbed by the termination of the *fallopian* tubes, is conveyed to the *uterus*, from which it is discharged ; but of this I have never seen any satisfactory proof.

It has been said, that wind may be collected and retained in the cavity of the *uterus* till it is distended in such a manner as to resemble pregnancy, and to produce its usual symptoms. By the sudden eruption of the wind, the tumefaction of the *abdomen* is removed, and the patient reduced to her proper size. Of this complaint I have never seen an example, but many cases have occurred of temporary explosions of wind from the *uterus*. When no injury has been done to the parts in former labours, I presume that this complaint happens to women with feeble constitutions and some particular debility of the *uterus* ; it is reasonable, therefore, to expect advantage from such means as strengthen the habit in general, or give energy to the *uterus* itself.

By the term mole, authors have intended to describe very different productions of, or excretions from, the *uterus*. By some it has been used to signify every kind of fleshy substance, particularly those which are properly called *polypi* ; by others,

others, those only which are the consequence of imperfect conception; and by many, which is the most popular opinion, every *coagulum* of blood, which continues long enough in the *uterus* to assume its form, and to have only the fibrous part, as it has been called, remaining, is denominated a mole.

There is surely much impropriety in including under one general name, appearances so contrary, and substances so different. Of the polypus we have already spoken. Of the second kind, which has been defined as an *ovum deforme*, as it is the consequence of conception, it might more justly be arranged under the class of monsters; and though it has the appearance of being a shapeless mass of flesh, if examined carefully with the knife, various parts of a child may be discovered lying together, apparently in confusion. The pedicle also by which it is connected to the *uterus*, is not of a fleshy texture, but vascular, and seems to be a true umbilical cord; there is also a *placenta* and membranes containing waters. The symptoms attending the formation, growth and expulsion of this mass from the *uterus*, correspond with those of a well formed child. With respect to the third opinion of a mole, an incision into its substance will discover its true nature; for though the external surface appears to be fleshy,

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the internal part is composed merely of coagulated blood. As substances of this kind, which most commonly occur after delivery, would always be expelled by the action of the *uterus*, there seems to be no reason for a particular enquiry, if popular opinion had not annexed the idea of mischief to them, and attributed their formation, or continuance in the *uterus*, to the misconduct of the practitioner. Hence the persuasion arose of the necessity of extracting all the coagula of blood out of the *uterus*, immediately after the expulsion of the *placenta*, or of giving medicines to force them away; but abundant experience hath proved that the retention of such coagula is not productive of any danger, and that they are safely expelled by the action of the *uterus*.

The *ovaria* are the seat of a particular kind of dropsy, which most frequently happens to women at the time of the final cessation of the *menstrues*. It is of the encysted kind, the fluid being sometimes contained in one cyst, often in several, and in some cases the whole tumefaction has been composed of hydatids not larger than grapes; of these different kinds we may judge by the fluctuation, and by the inequalities of the *abdomen*.

From the vesicular structure of the *ovaria*, there may be some inherent disposition to this disease; but it has usually been attributed to other causes,

causes, as accidents and rude treatment at the time of parturition, suppression of the *menses*, obstructions of the *viscera*, or injuries of the part. The symptoms attending it, are pain in the lower part of the *abdomen*, with a circumscribed tumour on one or both sides, gradually extending higher up and across the *abdomen*, which, when there is a suppression of the *menses*, is often mistaken for pregnancy; there is also, in some cases, a swelling of the thigh or leg of the same side with the diseased *ovarium*. In the early state of the disease, this dropfy may be distinguished from the *ascites* by the circumscription of the tumour; but when it is increased to a large size, unless it be of an irregular form, and we are acquainted with the early symptoms, the distinction is very difficult. It is to be observed, that the secretion of urine is but little diminished, and the constitution apparently little affected in the beginning of the dropfy of the *ovaria*, and that after a long continuance of it, the principal inconveniences seem to arise from the pressure it makes, and from the unwieldiness of the patient. It is also very remarkable, that this disease in many cases proceeds so very slowly, that twelve or fourteen years, or often a longer time, may pass from its commencement to its greatest enlargement.

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In the beginning of this dropfy, when the increasing *ovarium* is first perceptible through the integuments of the *abdomen*, there is often so much pain as to require repeated bleeding, fomentations, and opiates to appease it. When the disease has made a certain progres, no method of treatment has hitherto been discovered sufficiently efficacious to remove it. The fluid once deposited, seems to be out of the power of the circulation, its absorption not being promoted by the use of any of those evacuating medicines, which sometimes prove successful in the other kinds of dropfy. Recourse must then be had to the operation of the *paracentesis*, by which present relief is afforded, and by a repetition of the same operation, as often as the return of the abdominal swelling may require it, the life of the patient may be for many years prolonged. Should there be any suspicion that the water is contained in different cysts, or that the tumour should be composed of hydatids, it is proper to inform the friends of the patient that the operation may not succeed, or not in a manner equal to our wishes. And it should be established as a general rule, that we be assured, by an examination *per vaginam*, that women are not pregnant before this operation is performed, even supposing they have undergone the operation before; provided they are at a time of life and under

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circumstances which justify any suspicion of pregnancy. For through the want of this circumspection, deplorable and irremediable mischief has been done to the patient, and the profession very much disgraced.

The *ovaria* are also subject to scirrrous and cancerous diseases, with considerable enlargement. In these states they generally adhere to some adjoining part, but in some cases they continue detached and free from any adhesion, and sinking lower down in the *pelvis* on one side, or in the hollow of the *sacrum*, produce inconveniences according to their size and situation. Of those by which the progress of a labour may be impeded, we shall speak in the detail of the causes of difficult labours; but an instance of a diseased *ovarium*, occasioning the symptoms of a retroverted *uterus*, is so well described by my very ingenious friend Mr. Everard Home, that I shall beg leave to relate it.

Susannah Fletcher, in the twenty-third year of her age, had a suppression of urine, which frequently required the use of the catheter. Not being able to support the expence of medical attendance, she obtained admission into the Gloucester Infirmary, where having continued for several months, without any other than temporary relief, she gave up all hope of being cured, and

returned to her husband. She soon became pregnant, and, in a short time, was surprised to find that her complaint left her, though it returned immediately after her delivery. It disappeared a second time in the same manner, and under the same circumstances. Her husband went abroad while she was pregnant, and after her delivery she was obliged to go to service for her maintenance; but the daily necessity she was under of having the catheter introduced, rendering her unfit for that situation, she was admitted a nurse in the Royal Hospital at Plymouth, of which I was one of the assistant surgeons in December 1778.

She was then unable to void any urine without the catheter, she was habitually constive, her stomach was easily disturbed, and she was subject to hysterick fits. In all other respects she was tolerably healthy, and menstruated with regularity.

In May 1779, in the agitation of a violent fit, she vomited a large quantity of blood, and this hemorrhage frequently returning, she died in the beginning of June 1779.

The body was opened in the presence of several gentlemen belonging to the hospital.

All the *viscera* of the *abdomen* were in a healthy state, except the stomach and *duodenum*, which were somewhat inflamed on their external surface, and the former internally also near the

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cardia; but we could not discover the orifice of the vessel which had been ruptured.

In the examination of the contents of the *pelvis*, we found the *uterus* pushed forward towards the *pubis*, and the right *ovarium*, which was enlarged beyond the size of a hen's egg, lying between the *vagina* and *rectum*, where it had formed a bed, and was so much fitted to that position, that it could not be easily retained in any other. The left *ovarium*, *uterus*, and bladder, were free from disease.

The situation of the right *ovarium* was no sooner observed, than it occurred to me that it had produced the same effect as when the *uterus* falls back upon its *cervix* in the retroversion of the *uterus*, and with this idea all the symptoms of the disease under which the poor woman had laboured, the removal of the suppression of urine during pregnancy, and its return after delivery, could be readily explained. The analogy between the retroverted *uterus*, and the effect produced by the diseased *ovarium*, were in this case too obvious to escape observation; but if the cause of the disease had been discovered during the life of the patient, it would have been difficult to have afforded relief, unless some surgeon had been intrepid enough to have passed a trocar through the posterior part of the *vagina* into the *ovarium*, and

and discharged the fluid which it was found to contain.

There have been instances of one of the *ovaria* passing under *Poupart's* ligament into the groin, where it has put on the appearance, and produced the same symptoms, as when a portion of the *omentum* or *intestines* is strangulated; and relief has been obtained by the same mode of proceeding as if it were a real *hernia* of the intestine.

It is very remarkable that in diseases of the *ovaria*, teeth, hair, and other extraneous animal substances, are found in them so frequently, that there is scarce a collection of anatomical curiosities in which there are not various examples of them.

S E C T I O N VII.

THE principal parts contained in the cavity of the *pelvis*, are, first, the *urethra*, which is connected with the internal surface of the *symphysis* of the *os pubis*, with its orifice terminating immediately below the inferior edge, and joined at its other extremity to the bladder, which, when filled

filled with urine, extends into the cavity of the *abdomen*, and rests upon the upper edge of the *ossa pubis*. Secondly, the *vagina*, or canal which leads from the *pudendum* to the *uterus*, passing obliquely upwards and backwards, connected posteriorly with the lower part of the *rectum*, and anteriorly with the *urethra* and inner surface of the *ossa pubis*, as is the *uterus*, in part, to the bladder. Thirdly, the *rectum* or intestine; the posterior part of which adheres to the hollow of the *sacrum*. But we are not to conclude, that any part of the cavity of the *pelvis* is unoccupied; for besides these principal parts, every place is filled up with cellular or adipose membrane, and it seems as if by the pressure upon these, at the time of parturition, an effect equivalent to an absolute enlargement of the cavity was produced.

The cavity of the *pelvis* is considered, by anatomists, as the inferior part of the cavity of the *abdomen*, but in a description of its contents, with a view to the practice of midwifery, it appears more convenient to speak of them as distinct **cavities**, separated by the *peritonæum*; which, descending from the fore part of the *abdomen*, passes over the *fundus* and posterior part of the bladder, ascends over the anterior part and *fundus* of the *uterus*, and then making a deep inflection, covers the back part of the *uterus*, and the greatest por-

tion of the *vagina*. It then reverts over the anterior part of the *rectum*, and proceeds to form a covering to the cavity of the *abdomen*.

By this inflection of the *peritonæum*, the *uterus*, during pregnancy, is permitted to expand more freely, and to rise without inconvenience into the cavity of the *abdomen*. But from the same cause, women become liable to various diseases, to the retroversion of the *uterus*, to the *hydrocele*, or dropsy of the *perinæum*, and to that species of *hernia* which is occasioned by the descent of the intestines between the *vagina* and *rectum*. But quadrupeds, by their horizontal position, are exempt from every disadvantage to which the inflection of the *peritonæum* may subject women.

By the term retroversion, such a change of the position of the *uterus* is understood, that the *fundus* is turned backwards and downwards between the *vagina* and *rectum*; and the *os uteri* is turned forwards to the *pubis*, and upwards in proportion to the descent of the *fundus*, so that by an examination *per vaginam* it cannot be felt, or not without difficulty. By the same examination there may also be perceived a large round tumour, occupying the inferior part of the cavity of the *pelvis*, and pressing the *vagina* towards the *pubis*. By an examination *per anum*, the same tumour may be felt, pressing the *rectum* to the hollow

hollow of the *sacrum*; and if both these examinations are made at the same time, we may readily discover that the tumour is confined between the *vagina* and *rectum*.

Besides the knowledge of the retroversion which may be gained by these examinations, it is found to be accompanied with other symptoms. There is in every case a suppression of urine, with extreme pain and such distention of the bladder, that the tumour formed by it in the *abdomen*, often equals in size, and resembles the *uterus* in the sixth or seventh month of pregnancy. But it is necessary to observe, that the suppression of urine is, in general, absolute only before the retroversion of the *uterus*, or during the time it is retroverting; for when the retroversion is completed, there is usually a discharge of some urine, so as to prevent an increase of the distention of the bladder, though not in a sufficient quantity to remove it. There is also an obstinate constipation of the bowels, produced by the pressure of the retroverted *uterus* upon the *rectum*, which renders the injection of a clyster very difficult. But it appears that all the painful symptoms are chiefly in consequence of the suppression of urine, for none of those parts, which are apt to sympathise in affections or diseases of the *uterus*, are disturbed by its retroversion.

The retroversion of the *uterus* has generally occurred about the third month of pregnancy, and sometimes after delivery; it may likewise happen when the *uterus* is, from any cause, enlarged to the size it acquires about the third month of pregnancy, but not with such facility as in the pregnant state, because the enlargement is then chiefly at the *fundus*. If the *uterus* is but little enlarged, or if it be enlarged beyond a certain size, it cannot well be retroverted. For in the first case, should the cause of a retroversion exist, the weight at the *fundus* would be wanting to produce it; and in the latter, the *uterus* would be raised above the projection of the *sacrum*, and supported by the spine.

The suppression of urine has hitherto been supposed to be the consequence of the retroversion of the *uterus*, which has been ascribed to various accidental causes. But if we consider the manner in which these parts are connected, and examine the effect produced by the inflation of the bladder in the dead subject, so as to resemble the distension brought on by a suppression of urine in the living, we shall be convinced that the *uterus* must be elevated before it can be retroverted. Now, as there appears to be no cause capable of elevating, and at the same time projecting the *fundus* of the *uterus* backwards, besides the distention of the bladder, and as such elevation and projection necessarily follow

follow the distention, it is more reasonable to conclude, that the suppression of urine precedes the retroversion, if we do not allow it to be a cause without which the retroversion cannot exist. Moreover, if the *uterus* is in a state which permits it to be retroverted, when the bladder is much distended, a retroversion is a necessary consequence. If a woman, for instance, about the third month of her pregnancy, has a suppression of urine continuing for a certain time, we may be assured that the *uterus* is retroverted.

It would be absurd to contend for the opinion that the suppression of urine is the cause of the retroversion of the *uterus*, for were it not just, it would be contradicted by daily experience. But the matter no longer rests upon the foundation of opinion or conjecture. For from the first case in which I thought I had reason to suspect it, I have so constantly observed it, either by the reserve of women of superior rank in life, or by the restraint of those in inferior situations, neglecting or being prevented from attending to the calls of nature, that there does not remain a doubt concerning it. The fact hath also been proved in a variety of cases by practitioners of the first eminence, who have supplied me with the most unquestionable testimonies of its truth; and, in this case, it is a matter of great importance to discover the cause

of the disease, as the method of preventing it is thereby immediately pointed out.

But the preceding suppression of urine may be overlooked, as there is not occasion for it to be of long continuance in order to produce its effect, especially in a woman who hath a capacious *pelvis*, in whom the retroversion of the *uterus* is most likely to happen. It must also be observed, though the suppression of urine gives to the *uterus* its first inclination to retrovert, yet the position of the *os uteri* is such in the act of retroverting, and the tumour formed by the *fundus* is sometimes so large when actually retroverted, as to become, in their turn, causes of the continuance of the suppression of urine.

Should any doubt remain of the cause of the retroversion, it cannot be disputed but that all attempts to restore the *uterus* to its natural position, before the distention of the bladder is removed, must be fruitless, as the *uterus* will be borne down by the pressure of the superincumbent bladder. The first step to be taken for the relief of the patient, is to discharge the urine; yet there is always great difficulty in the introduction of the common catheter, because the *urethra* is elongated, altered in its direction, and pressed against the *os pubis* by the tumour formed by the retroverted *uterus*. But the inconveniences

cies thence arising may be avoided by the use of the flexible male catheter, slowly conducted. I say slowly, because the success of the operation, and the ease and safety of the patient, very much depend upon this circumstance; for if we affect to perform it with haste and dexterity, or strive to overcome the difficulty by force, we shall be foiled in the attempt, or it will be scarcely possible to avoid doing injury to the parts. The catheter should not be carried farther into the bladder, when the urine begins to flow, unless it ceases before the distention is removed, which, in some cases, happens in such a manner as to give us the idea of a bladder divided into two cavities. External pressure upon the *abdomen* will favour the discharge of the urine, after which the patient is sensible of such relief as to conclude, that she is wholly freed from her disease. A clyster should then be injected, and repeated if necessary, to remove the *faeces* which may have been detained in the *rectum*, before or during the continuance of the retroversion.

But though the distention of the bladder is removed by the discharge of the urine, and all the symptoms occasioned by it relieved, the *uterus* continues retroverted. It has been said, that the state of retroversion was injurious to the *uterus* itself, and would produce some dangerous disease in the part.

It

It has also been asserted, that if the *uterus* was permitted to remain in that state, it would be locked in the *pelvis* by the gradual enlargement of the *ovum*, in such a manner as to render its reposition impracticable, and the death of the patient an inevitable consequence. On the ground of these opinions we have been taught, that it is necessary to make attempts to restore the *uterus* to its natural situation, with all expedition, when the urine is discharged, and that we are to persevere in these attempts till we succeed. In case of failure, the means we have been advised to pursue, many of which are severe, and some extremely cruel, would best describe the dread of those consequences which have been apprehended from the retroversion.

For both these consequences there cannot surely be reason to fear. If the *uterus* be injured, there will be no farther growth of the *ovum*; and if the *ovum* should continue to grow, it is the most infallible proof that the *uterus* has not received any material injury. But it is remarkable, that in the most deplorable cases of the retroversion of the *uterus*, those which have terminated fatally, the death of the patient has been discovered to be owing to the injury done to the bladder only. It is yet more remarkable, that in the multiplicity of cases of this kind which have oc-

curred, many of which have been under the care of practitioners who had no suspicion that the *uterus* could be retroverted, and who would of course make no attempts to replace it, that there should be so few instances of any injury whatever. Yet every patient under these circumstances must have died, if their safety had depended upon the restoration of the *uterus* to its proper situation by art, attention having only been paid to the most obvious and urgent symptom, the suppression of urine, and to the removal of the mischief which might thence arise.

Opinions are often vain and deceitful, but, with respect to the matter now under consideration, they have also been very prejudicial. For it has been proved in a variety of cases, many of which were attended to with particular care by unprejudiced and very capable witnesses, that the *uterus* may remain in a retroverted state for many days or weeks, without any other detriment than what may be occasioned by the temporary interruption of the discharges by stool or urine. And contrary to all expectation it hath been moreover proved, that the *uterus* when retroverted, will often be gradually, and some times suddenly, restored to its position without any assistance, provided the cause be removed by the occasional use of the catheter. It appears that the enlargement of the

uterus,

uterus, from the increase of the *ovum*, is so far from obstructing the ascent of the *fundus*, that it contributes to promote the effect, the distention of the *cervix* becoming a balance to counteract the depression of the *fundus*; for I have found no cases of the retroverted *uterus* admit of a reposition with such difficulty as in women who were not pregnant.

Allowing that we have the power of returning the *uterus* when retroverted to its proper situation, knowing also that it may continue retroverted without any immediate ill consequences, and presuming that it is capable of recovering its situation by the gradual exertion of its own power, at least that such recovery is an event which follows the change which the parts undergo, it is necessary to consider the advantages and disadvantages which may result from our acting according to either intention.

If the attempt to replace the *uterus* be instantly made after the urine is discharged, so much force will often be required for the purpose as will, notwithstanding all precaution, give much pain, induce the hazard of injuring the *uterus*, and often occasion abortion; which, in some instances, is also said to have happened when little force was used, and even when the *uterus* was actually retroverted. It must likewise be granted, that, in some

some cases, by passing two or more fingers into the *vagina*, the *fundus* of the *uterus* may be raised beyond the projection of the *sacrum* without much force; though, in others, repeated attempts, with various contrivances, and the patient at the same time placed in the most favourable positions, have failed to procure success.

If, on the contrary, we are persuaded that the *uterus* will sustain no injury by its retroversion, and that there is no danger of its being locked in the *pelvis*, but that it will be gradually restored to its natural position without assistance, we have then only to guard against those inconveniences which may be occasioned by the pressure made upon the *bladder* and *rectum*. By the former of these, we shall be reduced to the necessity of using the catheter daily or frequently, which is generally done without difficulty, except the first time it is introduced. This operation, it must be acknowledged, is, in all cases, very disagreeable and troublesome to the patient, and, in some situations, the necessity we are under of performing it, is in itself a sufficient reason for our attempting to replace the *uterus* speedily. But the suppression of urine does not always remain through the continuance of the retroversion of the *uterus*, for when the distention of the *bladder* has been removed for some days, and its

power of action restored, the patient will often be able to void her urine without assistance.

We may then bring the matter to this issue. If the *uterus*, when retroverted, can be replaced by art, without the exertion of much force, or the risk of mischief, the immediate reposition, though not absolutely necessary, is at all times an event to be wished, as farther apprehension and trouble are prevented, the safety of the patient insured, and her mind quieted. But when the *uterus* cannot be replaced without violence, it seems more justifiable to wait for its return, and to satisfy ourselves with watching and relieving the inconveniences produced by the retroversion. We shall also find, that the longer the attempt to replace the *uterus* is delayed, the more easy the operation will be, and the success more certain.

To those who have been accustomed to consider the retroversion of the *uterus* as productive of immediate and urgent danger, it may seem strange to assert, that when the urine is discharged, the patients are often able to return to the common business of life, without danger, and with very little trouble, if no essential injury has been done to the bladder, by the greatness or long continuance of the distention. I do not mean that they will be as perfectly easy as if the

uterus was not retroverted, but the inconveniences they may suffer will be trifling and of short duration, compared with those which might arise from violent attempts to replace it.

Another complaint similar to that of which we have been speaking, and which has been called a retroflexion of the *uterus*, has occurred in practice. By this term is implied, such an alteration in the position of the parts of the *uterus*, that the *fundus* is turned downwards and backwards between the *rectum* and *vagina*, whilst the *os uteri* remains in its natural situation; an alteration which can only be produced by the curvature or bending of the *uterus* in the middle, and in one particular state; that is, before it is properly contracted when a woman has been delivered.

A suppression of urine existing at the time of delivery, and continuing unrelieved afterwards, was the cause of the retroflexion of the *uterus* in the single case of this kind of which I have been informed, and the symptoms were like those which are occasioned by the retroversion.

When the urine was discharged by the catheter, which was introduced without difficulty, the *fundus* of the *uterus* was replaced by raising it above the projection of the *sacrum*, in the manner advised in the retroversion.

SECTION VIII.

THE *hydrocele*, or dropfy of the *perinæum*, is not an original disease, but a symptom of the *ascites*, occasioned by the pressure of the water contained in the cavity of the *abdomen*, upon the inflected part of the *peritonæum* between the *vagina* and *rectum*. The former having no support from the adjoining parts, being unable to sustain the weight of the water which rests upon it, begins to yield, and the pressure being continued or increased, the posterior part of the *vagina* is distended, pushed down, and at length protruded through the external parts in such a manner as to invert the *perinæum*. A tumour is then formed at the *pudendum*, of whith the *vagina* is the external coat, and the *peritonæum* the internal. This appearance occurs too rarely, or the instances recorded are too few, to justify the establishment of any general mode of practice; but by the history of the following case, we may be enabled to make a distinction of this particular tumour, and of the method of treatment which it may sometimes be requisite and advisable to pursue.

In

In the year 1772, I attended a patient who was then pregnant of her sixth child. She had a slight cough, some difficulty in breathing, and an obtuse pain in her right side. Her eyes had a yellow tinge, and she had an uneasy sensation as if her stomach was swelled. Her urine, which was voided in small quantities, was high-coloured, and deposited a red sediment. Her pulse was quick, she had a constant thirst, and very little appetite. She reckoned that she was in the seventh month of her pregnancy.

Six ounces of blood were taken from the arm, a saline draught was given, with a few grains of rhubarb, twice daily or occasionally. She was advised to drink whey or ground-ivy tea with milk, and sweetened with honey for her common drink, to live chiefly upon fruit and vegetables, and to go into the country. There she resided near two months, during which time, little alteration was made in her diet or medicines, but the *abdomen* was distended to an unusually large size. She then returned to her family in town, in daily expectation of being delivered.

In the course of my attendance, she had often mentioned a complaint which was very troublesome, and occasioned great solicitude. This, from her description, I considered as a *prolapsus* of the *uterus*,

uterus, and expressing a desire to be more particularly informed, she permitted me to examine it.

I was surprised to find a tumour of the size, and somewhat of the form, of an inflated calf's bladder, rising from the *perinæum* internally, passing forwards and outwards, so as perfectly to occlude the entrance into the *vagina*. By pressure the tumour lessened, and by a continuance of the pressure it entirely disappeared, leaving a loose pouch within, and on the back part of the *vagina*. When she stood up, the tumour returned to its former size and situation; but when she lay down, and the pressure was renewed, it again disappeared. It had not the feel of *omentum* or intestine, but clearly contained a fluid which must communicate with some other cavity. I afterwards examined the *abdomen*, and could readily perceive a fluctuation in it. A doubt then arose, whether she was with child, but by an examination *per vaginam*, I could discover the head of a small child resting upon the *pubis*.

The peculiarity of this tumour, its recession when pressed, and its return when the pressure was removed and the patient stood upright, together with the assurance of there being water contained in the cavity of the *abdomen*, were presumptive proofs that there must be a communication between the tumour and that cavity, and this

this communication could not be explained so satisfactorily as by supposing, that the water had infinuated itself between the *vagina* and *rectum*, and by resting upon, had at length protruded the posterior part of the *vagina*.

If this opinion was just, it might yet be debated, what was the most reasonable method to be pursued for the relief of the patient; or whether it would not be more prudent, to defer all attempts till she was delivered. Several gentlemen of the first eminence in the profession were consulted upon the occasion, and it was agreed that we should wait till she was delivered.

About three weeks after this time her labour came on. The child being small, and presenting naturally, it was soon expelled, the tumour yielding gradually to the pressure of the head of the child, though it appeared that the expulsion was completed by the action of the *uterus* only, the abdominal muscles being too much distended to contribute any assistance. The *placenta* came away with great ease, and she had no complaint till the fourth day after her delivery, when after a few loose stools, her strength failed, and she expired.

After her death I was very desirous of knowing the truth of the opinion which had been entertained concerning her case, but her friends would not consent that the body should be opened. They, however,

however, permitted me to examine the tumour. A trocar being pushed into it, upwards of a quart of water was immediately discharged. The water then came away more slowly, but I observed that the *abdomen* subsided in proportion to the water discharged through the *canula* of the trocar.

A surgeon of great experience and ability, who saw this patient, informed me that he had met with a similar case in a woman who was not pregnant. He tapped the tumour with a small trocar, and left the *canula* remaining in the orifice for several days. The water continued to drain away till the *abdomen* was perfectly empty. This woman recovered, and had no return of the dropfy.

SECTION IX.

BY the descent of the intestines, or *omentum*, between the *uterus* and *rectum*, is constituted a particular kind of *hernia*, of which the cases recorded are very few. The inconveniences thence arising will depend upon the bulk of the tumour formed, and the compression which the parts thus situated may undergo. The methods by which relief is to be

be obtained by art will immediately occur to every practitioner, as they consist in making all prudent and reasonable attempts to replace the disordered parts, and keeping them in their proper situation when replaced. It is happy for the patient, that no immediate bad consequences are likely to follow this complaint, though, under particular circumstances, it may prove fatal, as in the following case.

A servant in a gentleman's family, in a state of perfect health, was suddenly seized with all the symptoms of a strangulated *hernia*, though, from the most accurate enquiry and examination, it did not appear that she then, or at any preceding time, had a *hernia*. All the means used for her relief were ineffectual, and she died on the third day of her illness. Leave being obtained to inspect the body, a considerable portion of intestine was found lying between the *uterus* and *rectum*, in a gangrenous state; and it was confined and compressed in this situation by a membranous bridle, which passed from the *fundus* of the *uterus* to the opposite part of the *rectum*.

CHAPTER III.

SECTION I.

On Menstruation.

FROM the *uterus* of every healthy woman, who is not pregnant, or who does not give suck, there is a discharge of blood, at certain periods, from the time of puberty to the approach of old age; and, from the periods or returns of this discharge, it is called Menstruation.

There are several exceptions to this definition. It is said, that some women never menstruate, their constitutions or structure not requiring this discharge. Some menstruate while they continue to give suck, and others are said to menstruate during pregnancy; but of this I have never known an example. Some are said to menstruate in early infancy, and others in old age; but such

discharges may, I believe, with more propriety, be called morbid, or symptomatic. There are also many varieties with respect to the periods and appearance of the discharge, from permanent causes or accidental influences; but the definition is generally true.

At whatever time of life this discharge comes on, a woman is said to be at puberty, though of this it is a consequence, and not a cause. The early or late appearance of the menses may depend upon the climate, the constitution, the delicacy or hardiness of living, and upon the manners of those with whom young women converse. There seems to be an analogy between the effect of heat upon fruits and the female constitution, with respect to menstruation, for the warmer the climate, the sooner the menses appear. In *Greece*, and other hot countries, girls begin to menstruate at eight, nine, and ten years of age; but advancing to the northern climates, there is a gradual protraction of the time till we come to *Lapland*, where women do not menstruate till they arrive at mature age, and then in small quantities, at long intervals, and sometimes only in the summer. But if they do not menstruate according to the genius of the country, they suffer equal inconveniences as in warmer climates, where the quantity discharged is much greater, and the

periods shorter. In this country, girls begin to menstruate from the fourteenth to the eighteenth year of their age, and sometimes at a later period, without any signs of disease; but if they are luxuriously educated, sleeping upon down beds, and sitting in hot rooms, menstruation commences at a more early period.

Many changes in the constitution and appearance of women are produced at the time of their first beginning to menstruate. Their complexion is improved, their countenance is more expressive and animated, their attitudes graceful, and their conversation more intelligent and agreeable; the tone of their voice becomes more harmonious, their whole frame, but particularly their breasts, are expanded and enlarged, and their minds are no longer engaged in childish pursuits and amusements.

The difference in the time of life when the menses appear, has been assigned as the reason why women, in hot climates, are almost universally treated as slaves, and why their influence is so powerful and extensive in cold countries, where personal beauty is in less estimation. In hot climates, women are in the prime of their beauty when they are children in understanding, and when their understanding is matured, they are no longer the objects of love. In cold climates their persons and their minds acquire perfection

fection at the same time, and the united power of their beauty and faculties is irresistible.

Some girls begin to menstruate without any preceding indisposition, but there are generally appearances or symptoms which indicate the change that is about to take place. These are usually more severe at the first than in the succeeding periods, and they are similar to those produced by uterine irritation from other causes, as pains in the back and inferior extremities, complaints of the viscera, with various hysterical and nervous affections. These commence with the first disposition to menstruate, and continue till the discharge comes on, when they abate or disappear, returning however, in some women, at every period during life.

The quantity of blood discharged at each evacuation depends upon the climate and constitution, and it varies in different women in the same climate, or in the same women at different periods. But there is a common quantity to which, under the like circumstances, women approach, and it may be estimated in this manner. Supposing the quantity to be about eighteen ounces in *Greece*, and two ounces in *Lapland*, there will be a gradual alteration between the two extremes, and in this country it will amount to about six ounces.

There

There is also a great difference in the time required for the completion of each period of menstruation. In some women the discharge returns precisely to a day or an hour, and in others there is a variation of several days. In some it is finished in a few hours, and in others it continues from one to ten days, but the intermediate time, from three to six days, is the most usual.

There has been an opinion, that the menstrual blood possessed some peculiar malignant properties. The regulations which have been made, in some countries, for the conduct of women at the time of menstruation, the expressions used, the disposal of the blood discharged, the complaints of women attributed to its retention, and the effects enumerated by grave writers, indicate the most dreadful apprehensions of its baneful influence. Under peculiar circumstances of health, or states of the uterus, or in hot climates, if the evacuation is slowly made, the menstrual blood may become acrimonious, but in this country and age, no malignity is suspected; the menstrual woman mixes in society as at all other times, and there is no reason for thinking otherwise than that this discharge is of the most inoffensive nature.

At the approach of old age women cease to menstruate, but the time of the cessation is commonly

monly regulated by the original, early or late appearance of the menses. Those who began to menstruate at ten or twelve years of age, will often cease before they arrive at forty; but if the first appearance was protracted to sixteen or eighteen years of age, independently of disease, such women will continue to menstruate till they have passed their fiftieth year. But in this country the most frequent time of the cessation of the menses is between the forty-fourth and forty-eighth year, after which women never bear children. By this constitutional regulation of the menses, the propagation of the species is, in every country, confined to the most vigorous part of life; had it been otherwise, children might have become parents, and old women might have had children, when they were unable to supply them with nourishment.

When women are deprived of the common uterine discharge, they are sometimes liable to periodical emissions of blood from the nose, lungs, ears, eyes, breasts, navel, and almost every other part of the body. These have been deemed as deviations of the menses, and communicated with the most scrupulous exactness, as if some great advantage was to be obtained by our knowledge of them. But the propriety of considering them in this point of view seems very doubtful, and I suspect

suspect that they ought rather to be esteemed as discharges belonging to some disease under which the patient may labour, or to the state she is in, and that they proceed from causes totally independent of those of menstruation.

Some men have also had a periodical discharge of blood from various parts of the body, but generally from the hemorrhoidal vessels. We might suppose that such constitutions resembled those of women, though the essential peculiarity cannot be discovered.

S E C T I O N II.

THE causes of menstruation have been divided into efficient and final, and though little has been said upon this subject which is likely to procure any practical advantage, sufficient attention hath been paid both to the discovery of the cause and end of menstruation; and where our senses have failed to procure evidence, the imagination hath been called to their aid. To unsophisticated observation, and to a mere relation of facts, or the inferences plainly to be deduced from them, we are unwilling to submit, as the powers

of

of the imagination are by such proceeding checked or suppressed, and the parade of learning is lost. Hence a multitude of opinions are formed and transferred by the writers of one age, to be controverted by those of the next, and we are perplexed, but not instructed. Of this truth there cannot be a doubt, if we consider for a moment the number of opinions which have devolved upon us, with respect to menstruation and conception, the fallacy of which it would be the business of one man's life to confute. But though we are not to be immersed in such enquiries, a cursory view of what has been said of the causes of menstruation seems necessary, to preserve the unity, as it may be called, even of a practical discourse.

It has been said, that the fluids of the human body were, like the ocean, influenced according to the phases of the moon, and that menstruation was similar to the tides. This discharge has been attributed to a plethora of the constitution, or of the *uterus*; to a ferment generated in the *uterus*, or to some humour of the constitution, as the bile, producing this specific effect upon the *uterus*. The discharge has been asserted, by some, to come from the veins of the *uterus*; by others, from the arteries; and by others, it is said to be poured from cavities or receptacles in the substance of the *uterus*, calculated to contain a certain quan-

S tity

tity of blood, as it was gradually collected. Some have presumed that it was a simple discharge of blood, others, that it was a secretion; some, that it was a constitutional discharge, and others, that it was merely local.

That menstruation is not occasioned by the moon, or any general physical cause, is evident from the circumstance of women menstruating at every moment of its increase or decrease; and if this reason was admitted, it would prove that men and animals should also menstruate. It is not probably occasioned by plethora, as the loss of several times the quantity of blood, discharged in menstruation, from the arm or any other part of the body, does not prevent or interrupt the flowing of the menses; and in those complaints which arise from obstructions of the menses, greater relief is afforded by a few drops of blood from the *uterus* itself, than by ten times the quantity from any other part. There seems be no reason for the opinion of any fermenting principle being the efficient cause of menstruation, no part of the *uterus* appearing fitted for its secretion or reception; and the opinion of bile acting with any peculiar influence upon the *uterus* was assumed, because of the resemblance between the symptoms arising from an excess or defect of bile, and those depending on menstruation; together with the influence

fluence which those of bilious constitutions feel at the time of menstruation. But this reason, like some of the former, would prove too much for the intended purpose, if it was admitted.

Among the early cultivators of anatomy, it seems to have been thought of great importance to decide from what vessels the menstrual blood was discharged, some contending that it was from veins, and others strenuously maintaining that it was from arteries; the opinion of there being receptacles in the *uterus* for its collection is of a modern date. This latter cannot be true, as from the examination of the *uteri* of women, at every intermediate period, such receptacles could not have been overlooked if they had existed. From the appearance of the menstrual blood in a healthy woman, and from that of the vessels by which it is discharged, which run in a tortuous manner during the act of menstruation, it can scarcely be doubted but that it is arterial.

The menstrual discharge seems to have been considered simply as blood, though of a different kind from the general mass, as it has been observed not to coagulate. All discharges of blood, in which there were *coagula*, have therefore been distinguished from menstruation, and assigned to some other cause. Whether menstruation be esteemed a secretion similar to that made by other glands of the body, and does not coagulate be-

cause it is essentially different from blood, whether the coagulation is prevented by a mixture with the discharge from the mucous glands, or whether it is a secretion from the *uterus* peculiar to that part, without analogy or resemblance to that of any other part, may be proved by future observations and experiments.

The various opinions of menstruation being a local or a constitutional discharge, may continue to be supported by those who think them of consequence. The discharge is local, though its effect may be constitutional; but it does not appear that the symptoms of the suppression of the menses supply a stronger argument in favour of the latter, than the regurgitation of bile upon the skin, or its discharge by urine when the natural passage is obstructed.

Numerous as the opinions have been of the efficient cause of menstruation, two only have been entertained of its final cause; first, that it was designed to preserve the *uterus* fit for conception; secondly, that this blood, being more in quantity than was necessary for the ordinary purposes of the constitution, became, during the state of pregnancy, nourishment for the *fætus*, without any reduction of the strength of the parent.

The first of these opinions, I believe, is not controverted, observation having fully proved

that women, who do not menstruate from the *uterus*, or who are not in a state disposed to menstruate, cannot conceive; even though they should have a periodical discharge from any other part of the body. Hence we may conclude, whether menstruation be necessary for the constitution of a woman or not, that it is a circumstance on which the due and healthy state of the *uterus* very much depends. It has also been observed that all animals at the time of their being salacious, or in a state fit for the propagation of the species, have a discharge equivalent to menstruation, which is generally mucous, but in some instances, seasons and climates becomes sanguineous.

Of the opinions that the menstrual blood contributes to the formation or nutriment of the *fætus* there is much reason to doubt. The former seems to have been founded on the observation that women who did not menstruate could not conceive; and this should have led to another conclusion, that the time of menstruation was most favourable to conception, which is allowed not to be just. And as to the share which the menstrual blood might have in the nourishment of the *fætus*, as all animals whether menstruating or not, supply their conception with nourishment of a proper kind, and in a sufficient quantity to bring them to perfection, we may be permitted to conclude that it is

by

by some common principle. If there had been a gradual abatement of the discharge, in proportion to the increase of the *fætus*, its nourishment might have been presumed to be one of the final causes of menstruation. But as there is an instant and a total suppression of the menses, when a woman hath conceived, they must either be superfluous in the early, or deficient in the advanced state of pregnancy.

The mucous discharge from the *uteri* of animals proves that they are in a state favourable to the propagation of their species; and the menstrual discharge is a proof of the same in women. For the reason of this difference we are to search, in the structure of the *uteri* of the different classes of animals. The desire of procreation exists in animals, only at certain seasons of the year; by these it is regulated in such a manner, that the offspring will be produced at the time when they are likely to suffer the least injury, from the climate in which they are to live, so that it is accommodated to every climate; unless the genuine nature of the animal be changed by luxurious treatment, or by defect of nourishment. Women, on the contrary, having every month that discharge which proves them capable of conceiving, propagate their species at every season of the year, and the gratification of the attendant desire, when enjoyed

joyed with prudence, may be esteemed a peculiar indulgence granted by providence to mankind.

S E C T I O N III.

ALL women have an opinion, that menstruation is to them a cause of diseases from which men are exempt, and their apprehensions of danger are chiefly confined to the times of the first appearance and final cessation of the menses. It is not proved that more women suffer at the time of puberty than men, though there may be some difference in their diseases; nor is it decided that those diseases, which occur at the time of the final cessation of the menses, are more frequent or more dangerous than those to which men are liable at an equivalent age. Some advantage seems to be derived to women from their capacity to menstruate, especially to those whose constitutions or particular situations require discharges of blood for their relief; for such, at all periods of life, are usually made with great facility from the vessels of the *uterus*, whereas, in men, these evacuations often happen from parts which sustain much

much consequent injury. The circumstances attending menstruation are, however, sometimes such as to require medical assistance, and these I shall consider in the following order; first, obstruction of the menses; secondly, excess of the menses; thirdly, painful menstruation; and then I shall speak of the treatment which may be proper at the time of the final cessation of the menses.

By the term obstruction is properly understood the defect or failure of the appearance of the menses, at a time of life when they might be expected; and by suppression, a total stoppage of the menstrual discharge which has before appeared. But the terms are indiscriminately used.

These have generally been esteemed original diseases, producing many troublesome and, sometimes, dangerous consequences; but the moderns have, with more propriety, considered them as symptoms of some disease with which the constitution was primarily affected. But in some cases the suppression of the menses seems to be an original affection, often, though not universally, succeeded by a certain train of untoward symptoms; for it appears, in some women, to be a simple interruption of the discharge, not necessary for the constitution at some particular time. The precise reason of this temporary suppression, it

it would be difficult to investigate, but I have observed it to happen, together with a wasting of the breasts, in very chaste women, who have been under the necessity of living separated from their husbands.

As very different diseases may become causes of the suppression of the menses, and as this may in different constitutions produce very opposite effects, it is not extraordinary that we should find those symptoms, which have been described as attendant on the suppression of the menses, so numerous and so unlike. But the two principal distinctions are to be made from the appearance of the patients, some of whom have a pale leucophlegmatic look, with every indication of want of power and energy in the constitution, and a fulness of vapid fluids; but others have a florid complexion, with signs of a hectic disposition. To both these states may be joined the symptoms which arise from uterine disturbance.

In the obstruction of the menses with a pale complexion, a variety of medicines have been given, which were supposed to possess the properties of influencing the *uterus*, and of promoting the menstrual discharge by some specific operation. Speculative differences have been lost in the uniformity of practice, for those who have differed widely in their theories of menstruation,

and in their opinions of the operation of the medicines prescribed, have agreed as to the individual medicines which they recommended; and it was of no importance to the patient whether the effect was produced by some specific operation, or was secondary to an alteration made upon the constitution. Every medicine which has the power of strengthening or invigorating the habit, bitters, aromatics, chalybeates, become eventually promoters of the menstrual discharge. But previous to their use it will, in general, be necessary to give a gentle emetic and laxative medicines, for the purpose of freeing the constitution from the load of inactive fluids, and of cleansing the *primæ viæ*, by which the operation of such medicines will be rendered more effectual. Of these, chalybeates are supposed to be the most powerful and best adapted to the case, and they may be given in a variety of forms and quantities, alone or joined with bitters and aromatics, provided the patient has no fever. Bathing in the sea is in many cases useful, and I have observed that the guides to the ladies continue to go into the water during the time of menstruation, without any inconvenience.

Medicines of this class do not always produce the menstrual discharge or its return, though they scarce ever fail to improve the health. In

the constitutions of some women, there is an idiosyncrasy which withstands the effect of such medicines as are generally found to answer certain intentions; and yet the same end may be gained by some other medicine, in general less efficacious. Different preparations of mercury have sometimes been given with advantage. The root of madder has been advised either in one or more large doses, about the time when the menses are expected, or to the quantity of half a dram twice or three times daily in the intervals. Repeated emetics, which are supposed to operate not by cleansing the *primæ viæ* only, but by agitating and calling forth the powers of the constitution to more vigorous action, are sometimes successfully used. Electricity has lately been practised and recommended by men of reputation, and often, I believe, with success.

In the suppression of the menses with a pale complexion, the diet should be generous, and wine may be allowed. Exercise of every kind is proper, but it ought not to be greater than the patient can bear without fatigue. She may often be invited by dancing or riding on horseback, and these seem best adapted to her complaint.

The suppression of the menses with a florid complexion, is usually combined with symptoms

very different from those which occur when it is pale, and a method of treatment reverse to the former is required; for the colour of the cheeks is the flush of disease, and not the glow of health. Such patients have usually a slight cough, pains in the breast, some difficulty in breathing, fever, and other signs of a consumptive tendency. In these cases, instead of pursuing the former intention, with the view of producing or promoting the menstrual discharge, we must regard the disease, and endeavour to give relief by repeated bleeding in small quantities, by antiphlogistic and emollient medicines, by a vegetable diet, and by repose, forbidding all exercise but that of the most easy kind. The *tinctura Melampodii* has, in such cases, been strongly recommended; but the principal good which it does, seems to be produced by its operation as a gentle laxative.

The menses are sometimes suppressed by sudden exposure to cold, or by violent exercise and agitation during the time they are flowing. Even in these cases the suppression is subsequent to the attack of some disease, as a pleurisy, peripneumony, acute rheumatism, or the like; and under such circumstances, the same treatment is to be advised as the particular nature of the disease may require, without regard to the menses.

The excess or profusion of the menstrual discharge may be of two kinds. It may consist either in the frequency of its return, or the superfluity of its quantity at each period. Instances occur, in practice, in which women menstruate at each period a larger quantity than their constitutions are able to afford, yet those cases, which are usually reduced under the term profusion of the menses, are very rare; what are called such, being either hemorrhages accompanying early abortions, or morbid or symptomatic discharges from the *uterus*. The symptoms of the profusion of the menses, are the same as those which are produced by hemorrhages from any other part of the body, with some peculiar to affections of the *uterus*.

If there should be merely too large a quantity of menstrual discharge at each period, or too frequent returns, such medicines and regimen as strengthen the constitution will be proper; and when they have been supposed to arise from the want of a due degree of contractibility in the blood vessels, gentle emetics, occasionally repeated, have been of great service. However, in far the greater number of cases of this kind which occur in practice, the discharge seems to be symptomatic and dependant on the feverish state of the patient. For if astringent or strengthening medicines

cines are given in the first instance, they are so far from removing the complaint, that they increase it; but if the feverish disposition be previously abated by bleeding, and a proper regimen, such medicines may then be given with propriety and advantage. In discharges of blood from the *uterus*, proceeding from diseases of the part, the treatment must depend upon the nature of the disease.

The pain with which some women menstruate at each period, is sufficient, from its violence and duration, to render a great part of their lives miserable. Healthy, robust women, or those in whom the process is speedily concluded, suffer very little at that time; the pain is, therefore, to be attributed to an increased degree of irritability in the habit, or to the difficulty with which those vessels, designed for the menstrual discharge, become permeable. It is in general moderated, and sometimes altogether removed, by the use of such means as lessen uterine irritation, or facilitate the discharge. Bleeding in small quantities, gently purgative medicines, and opiates repeated according to the urgency of the case, may be occasionally directed with advantage. Soaking the feet in warm water, or receiving the steam of it upon the parts principally affected, will often do much service; but no medicine of this kind gives equal relief

relief with, the warm bath, which may be used every evening, when the symptoms preceding menstruation come on, and continued throughout the period. Many medical writers have advised, and it is yet a popular custom, to give medicines of that kind, which have been called deobstruent, with the view of promoting the discharge by quickening the action of the parts concerned; but as all such disturb and increase the heat of the body, they are found, by experience, rather to add to the pain, than to contribute to its abatement.

At the approach of old age the menses disappear, the constitutions of women neither requiring nor allowing a continuance of the discharge. It was before observed, that this event usually happens about the forty-eighth year of their age, though some instances have occurred of their cessation so early as the thirty-fifth, and of their duration to the sixtieth year of the woman's age.

The menses seldom disappear suddenly, but before their departure, they become irregular in their periods or in the quantity discharged. These irregularities are usually accompanied with disturbances in the constitution, particularly of the *viscera*, and those complaints which are called hysterick.

All women are alarmed at the time of the final cessation of the menses, and are persuaded that the ill consequences, which sometimes ensue, are to be prevented by proper care and management. But it must be observed, that scarce one of a great number of women suffers more than temporary inconvenience on that account. Nor is it reasonable to think, that any disease should be a necessary consequence of the cessation of a discharge which is as perfectly natural as its appearance or continuance. But if there be a disposition to disease in the constitution, especially in the *uterus*, a more rapid progres is made when the menses cease, not because they give existence to, or increase the disease by their qualities, but because the constitution, or the part disposed to disease, is deprived of a local discharge by which it was relieved.

On the presumption that the menses retained, became, by their malignity, the cause of diseases, many medical writers have advised aloetic, and other stimulating medicines, which were supposed to posseſs the power of continuing the discharge a longer time than the natural. As the principle is not just, the practice is also in general very injurious; for I hardly recollect an instance in which such medicines did not do mischief, by increasing all those complaints which were imputed

puted to, because they occurred at the time of, the final cessation of the menses. But the present mode of practice is far more reasonable and successful, it being now usual to bleed occasionally, and to give lenient purgatives, avoiding all kinds of medicine and diet which are heating.

It is, however, a well known fact, that the *uterus* is more liable to diseases at the time of the final cessation of the menses than at any other, and that either other terminate in a *schirrus* or *cancer*, with consequences the most painful and deplorable. We have, at present, no idea of a *cancer* but that it is an incurable disease, and when it affects the *uterus*, besides the general symptoms which arise from uretine irritation from other causes, there is a serous, ichorous, or bloody discharge, of such an acrimonious quality, as to excoriate the external parts which it may touch, and at length to corrode the bladder and *rectum*; admitting no other relief than what is afforded by opium, which has only the power of procuring an imperfect and short insensibility to the tortures of the disease.

For the relief of those who have suffered all the complicated evils of a *cancer* of the *uterus*, humanity and interest have instigated many practitioners to pay the most serious attention to this

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disease, with the view of discovering its cause, and some adequate remedy; even the pretensions of empirics have been examined with candour and tried with perseverance. Of course we have been led to the use of a variety of medicines, of which great expectations of benefit have been entertained, as preparations of mercury, of antimony, sarsaparilla, bark, and, above all, the hemlock, either separate or combined with each other. Baths, fomentations, injections of every kind, have been applied with many different contrivances. Some of these have evidently accelerated the progress of the disease, and though others have afforded temporary relief, few ingenuous men will hesitate to acknowledge, that the good to be expected from any mode of treatment, or medicine hitherto discovered, must be obtained by the relief of the symptoms, rather than the diminution or removal of the disease.

It is remarkable that the cure of cancers of other parts of the body, where applications could be made with the greatest facility and advantage, has not been attempted, when those of the *uterus* have been undertaken with great confidence. This may be among the instances in which the credulity of patients renders them liable to the imposition of empirics. If it be however allowed, that

this disease is incurable, and that regular practice despairs of giving assistance, the trials of empiricism, under some restrictions, may not only be permitted but encouraged, with the hope of some casual good.

But this eagerness to discover some specific remedy for a cancer, has, in one view, been productive of mischief. Though the essential nature of the cancerous *virus* is unknown, one of its first effects is inflammation, with its concomitant symptoms. As the disposition to inflame may often be removed by bleeding and proper medicines, the part may be kept in a quiescent state, and the progress of the disease retarded. For this purpose also, local bleedings, with scarification or leeches on the lower part of the back, or on the thighs, are often useful, and issues have been found, in some cases, to have done much service. But if these means of giving relief are neglected, and we are wholly engaged in the contemplation of an absolute and effectual cure, it appears that we reject a less advantage which is in our power, for the pursuit of a greater, though distant good, which we may never acquire. It must also be observed, that many cases have occurred in which those symptoms, which commonly attend a cancer of the *uterus*, have come on with great rapidity and

and violence, yet the patient has not only been relieved, but an effectual cure hath been obtained by activity and perseverance in the antiphlogistic treatment.